

APPLICATIONS FOR ADMISSION AND FOR TRANSFER

The Constitution provides that the Board of Direction shall elect or reject all applicants for *Admission* or for *Transfer*, and, in order to determine justly the eligibility of each candidate, the Board must depend largely upon the Membership for information.

This list is issued to members in every grade for the purpose of securing all such available information, and every member is urged to scan carefully each monthly list of candidates and to furnish the Board with data in regard to any applicant which may aid in determining his eligibility. It is the *Duty* of all *Members* to the *Profession* to assist the Board in this manner.

It is especially urged, in communications concerning applicants, that errors in the record be pointed out and a *Definite Recommendation as to the Proper Grading in Each Case* be given, inasmuch as the grading must be based upon the opinions of those who know the applicant personally, as well as upon the nature and extent of his professional experience. If facts exist derogatory to the personal character or to the professional reputation of an applicant, they should be promptly communicated to the Board. *Communications Relating to Applicants are considered by the Board as Strictly Confidential.*

The Board of Direction will not consider the applications herein contained from residents of North America until the expiration of thirty (30) days, and from non-residents of North America until the expiration of ninety (90) days from April 1, 1930.

MINIMUM REQUIREMENTS FOR ADMISSION

Grade	General Requirement	Age	Length of Active Practice	Responsible charge of work
Member	Qualified to design as well as to direct work	32 years	12 years*	5 years
Associate Member	Qualified to direct work	25 years	8 years*	1 year
Junior	Qualified for sub-professional work	18 years†	4 years*	
Affiliate	Qualified by scientific acquirements or practical experience to co-operate with engineers			
Fellow	Contributor to the permanent funds of the Society			

* Graduation from a school of engineering of recognized reputation is equivalent to 4 years active practice.

† Membership ceases at age of 32 unless transferred to higher grade.

APPLICATIONS FOR ADMISSION AND FOR TRANSFER

LIST OF APPLICANTS.

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The fact that applicants give the names of certain members as references does not necessarily mean that such members endorse.

The number in the center above each record indicates the serial number of the applicant for the current year, and that at the left the district in which he resides.

The abbreviations in Italics represent, respectively, *TT*, Total Time; *SP*, Sub-Professional Work; *P*, Professional Work; *RC*, Responsible Charge; *D*, Design. The figure for Total Time is determined by adding one-half the time spent in Sub-Professional Work to the time spent in Professional Work. The figures showing the amount of time spent in Responsible Charge and on Design are the estimate of the Applicant. The allowance of four years for graduation or of one-half of a year for each academic year successfully completed in an engineering college without graduation is included in Total Time and Professional Work.

FOR ADMISSION

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(1) **ADAMS, JAMES WENDELL**, 821 Bergen Ave., Jersey City, N. J. (Age 33. Born Albany, N. Y.) 1925 C. E., Rens. Pol. Inst. *TT 4: P 4*—Sept. 1915 to June 1916 Chairman and Rodman with H. B. Parsons, C. E., Mun. Engr., Albany, N. Y. *TT 0.4: SP 0.4*—June 1916 to Sept. 1920 with U. S. Army, until 1917 with Troop B, 1st N. Y. Cavalry, 1917 to 1918 with Co. D, 106th U. S. M. G. Bn. in South Carolina and France, some transit work and range-finding, after 1918 ill. *TT 0.4: SP 0.4*—June to Nov. 1924 Jun. Engr., Grade B, New York State Engr.'s Office, Dept. of Canals and Waterways, Albany, estimating costs and quantities, checking designs and strength of materials. *TT 0.5: P 0.5*—Nov. 1924 to May 1925 Office Mgr., Delaware & Hudson R. R., Colonie, N. Y., locomotive and repair shop, reports and inventories on repairs. *TT 0.2: SP 0.2*—June 1925 to Feb. 1927 Civ. Engr., The Foundation Co., New York City, until Feb. 1926 at Exeter power plant, West Pittston, Pa., on lines and grades, 5 miles of railroad, designing and in charge of placing reinforcing for power house, then Foundation Engr., on Academy Bldg., Newark, N. J., lines and levels, pipe pile foundation (Feb. to May 1926) on Savoy-Plaza hotel, New York City, lines and levels, individual pier air-caisson work (May to July 1926) on Equitable Trust Co. Bldg., New York City, lines and levels, retaining wall caissons (air) (July to Sept. 1926) on New York State National Bank, Albany, underpinning and open caissons, being Asst. Supt. in charge of sub-contractors on superstructure (after Sept. 1926). *TT 1.8: P 1.8: RC 1.1: D 0.4*—Feb. to June 1927 Inspector and Representative of Moran, Maurice & Proctor, Cons. Engrs., on foundations, designing walls and bracing for Chase National Bank (retaining wall caissons), and on open caisson job, Central Savings Bank, New York City. *TT 0.4: P 0.4: RC 0.3: D 0.1*—July 1927 to March 1929 Asst. to Supt. of Public Works, Mountain Lakes, N. J., in charge of surveys, designing, drafting and construction of improvements, roads, sewers, water system, etc., estimating costs, etc. *TT 1.7: P 1.7: RC 1.7: D 0.8*—March 1929 to date Res. Engr. for New York Dist., New York Air Terminals, in charge of engineering and surveying work on three airplane landing fields, Grand Central Air Terminal, Secaucus, N. J., Hadley Field, N. J., North Beach, N. Y., etc. *TT 1: P 1: RC 1*—*TT 10.4: SP 1: P 9.4: RC 4.1: D 1.3*. Refers to M. J. Adams, F. W. Douglas, G. R. Goethals, H. Hartwell, T. R. Kendall, F. B. Maltby, B. H. Wait.

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(8) **BACHMANN, FRANK**, 333 North Michigan Ave., Chicago, Ill. (Age 42. Born New York City.) 1910 B. S. in Chemistry, Univ. of Ill. *TT 2: P 2*—1907 to 1910 Asst. Bacteriologist, Illinois State Water Survey.—1910 to 1915 Asst. Chemist, San. Dist. of Chicago. *TT 5: P 5*—1915 to 1919 Chemist, California State Board of Health, Bureau of Eng., inspection of operation water- and sewage-treatment plants. *TT 4: P 4: RC 4*—1918 to 1919 2d Lieut., U. S. Army, San. Corps, being Camp San. Engr., Camp Sherman, Ohio. *TT 0.4: P 0.4: RC 0.4*—1919 to 1920 Chemist, Industrial Waste Comm., Con-

necticut, in charge of design of industrial waste-treatment plants; designed, constructed and operated experimental sewage plant at New Britain, Conn., and designed waste-treatment plant Cheney Silk Mill, So. Manchester, Conn. TT 1.5: P 1.5: D 1.5.—1920 to date Mgr. San. Div., The Dorr Co., Inc., Engrs., had charge of design and operation of sewage-experimental plant at Rochester, N. Y.; developed fine screen for sewage treatment and directed development of design for these units; past 2 years had charge of development and marketing of all sewage equipment and supervised development of new design or plant layouts; sales work consists of studying practical method of fitting company's equipment into design. TT 9.5: P 9.5: D 9.5.—TT 22.4: P 22.4: RC 13.9: D 11. Refers to R. A. Alton, E. B. Besseliere, S. A. Greeley, J. H. Gregory, C. B. Hoover, L. R. Howson, J. F. Jackson, H. P. Jones, F. G. Nelson, N. T. Veatch, Jr.

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(11) BARROWS, EDGAR LLEWELLYN, 139 South Castillo St., Santa Fe, N. Mex. (Age 44. Born Detroit, Mich.) Oct. 1904 to Dec. 1908 student, Eng. Dept., Univ. of Michigan. TT 1.5: P 1.5.—Feb. 1909 to May 1916 Clerk, Mgr. of Order Dept., Chf. Clerk, Dist. Plant Office, etc. with Michigan State Telephone Co., Detroit, Mich., Clerk, Detroit Edison Co., and farming in New Mexico, including 3 months on surveying. TT 0.2: P 0.2.—June 1916 to April 1917 ill.—May 1917 to Oct. 1918 and Jan. 1919 to June 1923 with New Mexico Coll. of Agriculture and Mechanic Arts, as Asst. in Irrigation, and (after Jan. 1919) on irrigation and drainage investigations and water-supply studies. TT 5.9: P 5.9: RC 2.7.—Nov. 1918 to Jan. 1919 Private, U. S. Army, at Field Artillery Officers' Training School, Camp Zachary Taylor, Ky.—July 1923 to May 1924 Hydrographer, U. S. Bureau of Reclamation, Las Cruces, N. Mex., on stream gauging. TT 0.8: P 0.8: RC 0.8.—June 1924 to May 1925 managing a farm.—Oct. 1925 to Jan. 1927 Office Asst. with Herbert W. Yeo, Las Cruces, drafting, computing, mapping and estimating. TT 1.2: P 1.2: RC 0.2.—March 1927 to date Office Hydrographer, Asst. State Engr. and Chf. Hydrographer, State Engr.'s Office, Santa Fe, since May 1927 in responsible charge of hydrographic work. TT 3.1: P 3.1: RC 2.8.—TT 12.8: P 12.8: RC 6.6. Refers to J. L. Burkholder, A. Diefendorf, P. S. Fox, J. C. Harvey, R. G. Hosea, G. M. Neel, A. O. Peabody, W. H. W. Yeo.

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(1) BIRKE, HAKAN DANIEL, 255 Seventy-Fourth St., Brooklyn, N. Y. (Age 25. Born Orkelljunga, Sweden.) 1927 C. E., Chalmers Tech. Inst. TT 4: P 4.—Feb. 1928 to March 1929 Designer, Allm. Betongbyggnadsbyran, Stockholm, Sweden, reinforced concrete bridges and buildings. TT 1.1: P 1.1: D 1.1.—April 1929 to date Designer of bridges for railroad electrification, with Gibbs & Hill, Cons. Engrs., New York City. TT 0.9: P 0.9: RC 0.6: D 0.9.—TT 6: P 6: RC 0.6: D 2. Refers to D. Y. Dimon, G. T. Gilman, J. G. A. Johnson, F. Rullan, E. J. Squire.

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(1) BLAUVELT, JOHN IRVING, 769 Market St., Paterson, N. J. (Age 25. Born Paterson, N. J.) July 1921 to Sept. 1923 File Clerk and Draftsman, Lackawanna R. R., Hoboken, N. J., on maps and accident investigations. TT 1.1: SP 1.1.—June 1924 to Sept. 1925 with Erie R. R., Jersey City, N. J., as Transitman, Draftsman and Inspector on Chambers St. Lift Bridge, etc., on yard surveys and dock construction datum, Inspector of furnaces and power house, inspection and record plans of grain dock, etc. TT 0.9: SP 0.4: P 0.5: RC 0.5.—Jan. 1926 to Jan. 1927 Rodman, Transitman, Acting Party Chf. and Draftsman, Public Service Elec. & Gas Co., Newark, N. J., on surveys and stakeouts of transmission lines, Field Draftsman in charge of recapitulation of properties. TT 0.6: SP 0.4: P 0.2: RC 0.2.—Jan. 1927 to Aug. 1928 Computer, Party Chief, Asst. Mgr., Harrison Office, Chas. H. Sells, Inc., Pleasantville, Mt. Kisco and Harrison, N. Y., in charge of surveys, assessment maps and construction quantities, revisions of sewer systems, plans, supervision and inspection of concrete and macadam roads, surveys, easements and right-of-way maps. TT 1.5: SP 0.1: P 1.4: RC 1.4: D 1.4.—Aug. 1928 to date Office Engr. and Designer, with Myron Hendee, Civ. Engr., Hackensack, N. J., in charge of design, computing and monumental subdivisions, including Yorkview (2 000 acres) at Norwood, N. J.; work entails turning farm land into project with roads, sewers and houses. TT 1.6: P 1.6: RC 1.6: D 1.6.—TT 5.7: SP 2: P 3.7: RC 3.7: D 3. Refers to F. O. Dufour, M. Hendee, C. H. Sells, F. W. Slantz, C. H. Splitstone.

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(1) BROSSA RAMONEDA, LUIS JOSE, Salon de San Juan 127 Pral., Barcelona, Spain. (Age 43. Born Barcelona, Spain.) 1904 B. S., Univ. of Barcelona. 1911 Agr. Engr. School of Agriculture of Barcelona.—Jan. 1914 to Feb. 1921 and Feb. 1924 to July 1929 with Dept. of Public Works, Santo Domingo, Dominica Republic, until June 1914 and Feb. to Dec. 1918 as Asst. Dist. Engr. on northern part of Dominican Republic and in charge (about 1 year) of relocation of Santiago-Montecristy (30 km.) and Santiago Moca

(20 km.) highways, July 1914 to Feb. 1918 and Feb. to Apr. 1924 Asst. Engr., 2 years, in main office, in charge of office and field work, 1½ years on location and construction of San Pedro de Macoris-Hato Mayor highway (25 km.) and about 3 months on location of Comendador to Las Matas highway (15 km.), Dec. 1918 to Feb. 1921 and April 1924 to Feb. 1928 Res. Engr. in charge of location and construction of La Vega-Rincon (20 km.) and Santiago-Puerto Plata (40 km.) highways, Feb. 1926 to Dec. 1927 Constr. Engr., Santiago-Puerto Plata highway for C. J. Alberts, Contr., and Jan. 1928 to July 1929 Contr. Engr. on construction of Los Llanos-Carretera Mella highway (15 km.). *TT 11.1: SP 1.4: P 9.7: RC 8.2: D 2.* Refers to W. I. Baucus, J. H. Caton, 3d, M. A. Cocco, A. L. Harris, L. E. Loxley, G. S. Rinehart, N. A. Swan, A. Van Siller, L. H. Walker.

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(5) BROWN, LYTHE, U. S. Army, Washington, D. C. (Age 57. Born Nashville, Tenn.) 1893 B. E., and 1894 C. E., Vanderbilt Univ. 1898 U. S. Mil. Acad. *TT 4: P 4.*—Summers 1892 and 1893 Rodman and Masonry Inspector, Asst. Engr., with J. S. Walker, Nashville, Tenn., instrument work and masonry inspection, Lock No. 1, Cumberland River.—May 1898 to date with U. S. Army, successively as 2d Lieut., 1st Lieut., Major, Col., and at present Major-Gen., Corps of Engrs., engaged as follows: May to Sept. 1898 on bridge, road and wharf construction in Cuba; Nov. 1898 to Aug. 1899 on sea coast defense, mouth of Savannah River; Sept. 1900 to Jan. 1902 City Engr., Manila, Philippine Islands; Jan. 1903 to June 1907 Instructor of mathematics, military and civil engineering, U. S. Military Acad.; Sept. 1908 to April 1912 Dist. Engr., Louisville, Ky., on river improvement; April 1912 to Sept. 1916 on military field operations; Oct. 1916 to May 1917 Dist. Engr., Nashville, Tenn., on river improvement and hydro-electric power; May 1917 to March 1918 Div. Engr., military engineering in field; July 1919 to Sept. 1920 Dist. Engr., Nashville, Tenn., and Florence, Ala., on river improvement and hydro-electric work; since Oct. 1929 Chf. of Engrs.; also (at various times) in command of engineer and other troops, with General Staff, and at army schools. *TT 17.9: P 17.9: RC 11.9.*—*TT 21.9: P 21.9: RC 11.9.* Refers to C. H. Birdseye, W. M. Black, H. Deakyne, A. J. Dyer, J. G. Jackson, O. H. Landreth, H. McDonald, W. H. Schuerman, W. L. Sibert, J. S. Walker, C. B. Wilson.

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(9) BUELL, ELMER ELLIOTT, 65 Thirteenth Ave., Columbus, Ohio. (Age 24. Born Marysville, Ohio.) 1929 B. C. E., Ohio State Univ. *TT 4: P 4.*—Summer 1928 Chainman, The Hocking Valley Ry. Co., Columbus, Ohio.—Summer 1929 Transitman, Ohio State Highway Dept.—*TT 4: P 4.* Refers to C. T. Morris, J. C. Prior, J. R. Shank, R. C. Sloane.

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(2) BYRNE, JOHN DAWSON, 40 Riverdale St., Methuen, Mass. (Age 24. Born Methuen, Mass.) 1929 B. S. in C. E., Univ. of Mich. *TT 4: P 4.*—Feb. to Dec. 1929 Reinforced Concrete Detailer and Designer, Kalman Steel Co., Detroit, Mich. *TT 0.4: SP 0.4.*—Dec. 1929 to March 1930 with Bridge Dept., Boston & Albany R. R., designing and detailing, and March 1930 to date with Boston & Maine R. R. on similar work. *TT 0.2: SP 0.2.*—*TT 4.6: SP 0.6: P 4.* Refers to L. M. Gram, W. C. Sadler.

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(2) CAHILL, JOSEPH EDWARD, 25 Wade St., Boston, Mass. (Age 58. Born Boston, Mass.) 1888 to 1892 and 1896 to 1898 with George A. Cahill, Archt. and Engr., on drafting, tracing, designing, etc., and supervising construction. *TT 4: SP 2: P 2: RC 2: D 0.5.*—1892 to 1896 with M. D. Mealey & Co., designing, estimating and supervising construction. *TT 4: P 4: RC 4.*—1898 to date with City of Boston, Mass., until 1911 with Water Dept., on construction, inspection and drafting, then with Bldg. Dept., inspecting construction (7 years), examining plans (2 years) and (past 7 years) Chf. of Plan Div., checking plans and calculations for buildings and for alterations to buildings, including hotels, apartments, etc. (some named in application), also designed apartment buildings, garage, etc. *TT 20.5: SP 10.5: P 10: RC 7.*—*TT 28.5: SP 12.5: P 16: RC 13.* Refers to B. S. Brown, M. Linenthal, M. A. Reidy, L. K. Rourke, C. Stuetzel, Jr., J. T. Whitney.

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(4) CAMPBELL, PAUL FREDERICK, 633 Harrington St., Wilmington, Del. (Age 29. Born Lansdale, Pa.) 1924 C. E., Lehigh Univ. *TT 4: P 4.*—June 1924 to July 1925 Draftsman, Phoenix Bridge Co., Phoenixville, Pa., detailing vertical lift and bascule bridges, making plans, estimates, computations. *TT 0.6: SP 0.5: P 0.1: D 0.1.*—July 1925 to Aug. 1927 with McClintic-Marshall Co., Pottstown, Pa., until Dec. 1925 Draftsman on subways, crane runways, bridges, tier buildings, heavy construction, etc., then on shop improvement program, field and office work on crane runways, setting machinery and foundations, track layouts and surveys, after May 1926 in charge of details by outside parties, investigations, expediting shop work, and of extras between company and architect, some design and original investigations. *TT 1.8: SP 0.2: P 1.6: RC 1.3: D 0.4.*—Aug. 1927 to Jan. 1928 Estimator, Bethle-

hem (Pa.) Steel Co., estimating steel work, including field and shop estimates of new Hudson River Bridge. $TT\ 0.4: P\ 0.4$.—Jan. to Oct. 1928 with Design Div., Dwight P. Robinson & Co., New York City, on design of power stations, rolling mills, railway work, and (four months) on design of mill buildings in Middletown, Ohio, for American Rolling Mill Co. $TT\ 0.8: P\ 0.8: D\ 0.8$.—Oct. 1928 to date Designer, E. I. DuPont de Nemours & Co., Wilmington, Del., on design of chemical and industrial plants, buildings, bridges, also addition to DuPont Bldg., estimating, checking designs, engineering problems and some concrete work. $TT\ 1.4: P\ 1.4: RC\ 0.7: D\ 1.4$.— $TT\ 9: SP\ 0.7: P\ 8.3: RC\ 2: D\ 2.7$. Refers to R. J. Fogg, M. O. Fuller, R. A. Pendergrass, R. Saller, S. W. Sawin, G. Schobinger, J. L. Warner.

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(15) **CARNEY, JAMES THOMAS, Jr.**, 306 Citizens National Bank, Brownwood, Tex. (Age 28. Born Eagle Lake, Tex.) June 1921—Aug. 1922 with Nagle, Witt, Rollins Eng. Co., as Rodman, Chainman, Concrete Inspector, Checker and Inspector on drainage and road work in Wharton County. $TT\ 0.6: SP\ 0.6$.—April 1925 to Feb. 1926 and July 1926 to Feb. 1927 Rodman, Levelman, Traverseman and Field Asst., U. S. Geological Survey, on planimetric traverse, topography, preparing elevation, stream and road sheets, etc. $TT\ 1: SP\ 0.4: P\ 0.6$.—Feb. to July 1926 Levelman, Panhandle Geological Society, establishing permanent bench marks in oil fields (under supervision of U. S. G. S.) $TT\ 0.4: P\ 0.4$.—Feb. to Aug. 1927 and March to May 1928 with Maverick County Water Improvement Dist. No. 1 as Chf. of Party on topographic mapping and preliminary canal location and (after March 1928) Field Asst. on canal location, profile, cross-section and topography. $TT\ 0.7: P\ 0.7: RC\ 0.5$.—Sept. 1927—Feb. 1928 Levelman, Texas Gulf Sulphur Co., profile and cross-sections of San Bernardo River. $TT\ 0.5: P\ 0.5: RC\ 0.5$.—May to Dec. 1928 and July to Sept. 1929 Chf. of Party, Bexar, Medina and Atascosa Counties Water Improvement Dist. No. 1, on canal location and relocation, land subdivision, etc. $TT\ 0.8: P\ 0.8: RC\ 0.8$.—Feb.—June 1929 Chf. of Party, Brown County Highway Dept., on location and relocation of lateral roads. $TT\ 0.4: P\ 0.4$.—Dec. 1928 to Feb. 1929 and Sept. 1929 to date with Brown County Water Improvement Dist. 1, as Chf. of Party on preliminary survey of reservoir site, Lake Brownwood and (since Sept. 1929) Chf. of field work on final location of district boundary lines, canals, pipe-lines, etc., and Asst. on proposed dam. $TT\ 0.6: P\ 0.6: RC\ 0.6$.— $TT\ 5: SP\ 1: P\ 4: RC\ 2.4$. Refers to J. A. Norris, W. L. Rockwell, D. W. Ross, J. L. Starkie, P. A. Welty.

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(4) **CAVA, FRANK JOHN**, 1932 South Eleventh St., Philadelphia, Pa. (Age 25. Born Philadelphia, Pa.) 1927 M. E., Drexel Inst. $TT\ 4: P\ 4$.—June 1927 to date with Day & Zimmermann Eng. & Constr. Co., as follows: June 1927 to April 1928 Field Engr., laying out and checking work on the erection of power house; April to June 1928 Valuation Engr., on properties, machinery and buildings; July 1928 to date Field Engr., until April 1929 laying out and checking work on erection of 4-story reinforced concrete fireproof building (9 months) and in charge of construction of storm and sanitary sewerage systems and erection of cell blocks for New Eastern State Penitentiary. $TT\ 2.8: P\ 2.8: RC\ 0.9$.— $TT\ 6.8: P\ 6.8: RC\ 0.9$. Refers to J. B. Corridon, J. T. Kiernan, A. Miedwig, C. Penrose, L. E. Raymond, G. F. Rowell.

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(13) **CHESTER, GEORGE AVERY**, P. O. Box 2533, Stanford University, Cal. (Age 28. Born Rutherford, N. J.) 1920 A. B. in Civ. Eng., Stanford Univ. $TT\ 4: P\ 4$.—June to Aug. 1924 Rodman and Chainman, City of San Diego.—April to Sept. 1925 Asst. to Res. Engr. on Stanford Stadium, acting as Rodman, Instrumentman and Inspector. $TT\ 4: P\ 4$. Refers to S. Baker, J. C. L. Fish, C. Moser, L. B. Reynolds, E. C. Thomas, J. B. Wells.

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(6) **CHILD, HARRY CHARLES**, 501 South Keystone Ave., Sayre, Pa. (Age 43. Born Franklindale, Pa.) Registered Archt. and Engr., State of New York, Registered Prof. Engr., Pennsylvania.—1903 Susquehanna Collegiate Coll. 1907 C. E., Rens. Pol. Inst. $TT\ 4: P\ 4$.—June 1907 to Oct. 1908 Tracer, American Bridge Co., Elmira Heights, N. Y. $TT\ 0.8: SP\ 0.8$.—Oct. to Dec. 1908 and May to Dec. 1909 Eng. Draftsman, Designing Office, State Water Supply Comm., Water Power Dept., on investigations and plans for water-power projects (about 40). $TT\ 0.9: P\ 0.9: D\ 0.9$.—Jan. to April 1909 Fortification Draftsman, U. S. Army Engrs., on record drawings and measuring, Fort DuPont, Del., and Fort Mott, N. J.; designed. $TT\ 0.2: SP\ 0.2$.—Jan. 1910 to May 1912 Asst. Engr., Public Service Comm., First Dist., 2d Div., New York City, designing reinforced concrete and steel, making detail designs, in charge of laying out base lines for Lexington Ave. Subway and on construction. $TT\ 2.4: P\ 2.4: D\ 2$.—May 1912 to Oct. 1916 with New York State Highway Comm., until Feb. 1914 as Asst. Engr. at Binghamton and Hornell, N. Y., on contract plans, specifications, right-of-way lines, and in charge of plans, surveys and construction, and after

Feb. 1914 County Engr., Chemung County, in general charge of construction, surveys, plans, maintenance, etc., and of Elmira office. $TT\ 4.5: P\ 4.5: RC\ 4.2$.—Oct. 1916 to May 1918 Structural Designer with Stone & Webster, Boston, Mass., making designs and checking plans for buildings, power-houses, warehouses, stacks, foundations, Watertown Arsenal buildings, Hog Island Ship Yard, also Production Supervisor during war and (about 6 weeks) in office of Chf. Engr.; after Sept. 1917 (evenings) teaching reinforced concrete and structural mechanics, Northeastern Univ. $TT\ 1.7: P\ 1.7: D\ 1.7$.—May 1918 to date Archt. and Engr., at Sayre, Pa., on work for water companies, municipalities, public service corporations, etc., also Bridge Engr. for Susquehanna County, including plans, specifications, supervision of construction, etc., for apartment houses, school buildings, gymnasium, churches, swimming-pools, extension to water-works, alterations and additions to buildings, etc. (detailed statement forwarded with application); retained by about 22 corporations and municipalities; office has charge of plans and supervision of about 50 sewers and pavements. $TT\ 11.7: P\ 11.7: RC\ 11.7: D\ 11.7$.— $TT\ 26.2: SP\ 1: P\ 25.2: RC\ 15.9: D\ 16.3$. Refers to R. W. Atwater, H. A. Gray, R. H. Jacobs, W. McCulloh, J. H. Myers, W. W. C. Perkins, H. W. Preston, P. C. Ricketts.

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(8) **CHILDS, LEONARD CHAPIN**, 617 Forest Ave., Glen Ellyn, Ill. (Age 39. Born Oak Park, Ill.) 1909 to 1912 student in Civ. Eng., Univ. of Wisconsin. $TT\ 1.5: P\ 1.5$.—1912 to 1913 Laborer, Carpenter and Sub-Foreman, Roberts & Schaefer Co., Chicago, Ill., on construction of railway coaling-stations. $TT\ 0.5: SP\ 0.5$.—1913 to date with Bates & Rogers Constr. Co., Chicago, until Aug. 1914 as Timekeeper and Asst. Engr. on tunnels and bridges on 182 miles of Grand Trunk Pacific Ry., British Columbia, Aug. 1914 to June 1920 Asst. Engr., Asst. Supt. and Supt., on bridge, subway and dock work in vicinity of Cleveland, Ohio, designed forms, steel arch centers, etc. on Brooklyn-Brighton Vladuct and forms, etc., Detroit-Superior subway approaches; since June 1920 Chf. Engr. and later Mgr., Bldg. Dept., Chicago, directed construction of additions to three stations of Commonwealth Edison Co. in Chicago, and Waukegan station of Public Service Co., lumber manufacturing plant for Sears-Roebuck, Newark, N. J., etc. $TT\ 15.5: SP\ 1.5: P\ 14: RC\ 14: D\ 8$.— $TT\ 17.5: SP\ 2: P\ 15.5: RC\ 14: D\ 8$. Refers to F. L. Copeland, L. J. Hotchkiss, P. M. Larsen, G. B. McClary, R. Rasmussen, W. A. Rogers, J. C. Sanderson.

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(1) **CLARKE, FRANCIS WILLIAM**, 112-12 One Hundred Ninety-Sixth St., St. Albans, N. Y. (Age 24. Born New York City.) 1929 B. S. in E., Manhattan Coll. $TT\ 4: P\ 4$. Refers to J. J. Costa, P. J. Greenough.

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(8) **COPELAND, RONALD EVERETT**, 701 North Michigan Ave., Chicago, Ill. (Age 28. Born Marshalltown, Iowa.) Registered Prof. Engr. and Land Surveyor, State of Iowa. 1928 B. S. in C. E., Univ. of Wis. $TT\ 4: P\ 4$.—Feb. 1918 to May 1920 Rodman, Draftsman and Instrumentman, Eng. Dept., Dept. of Public Works, Des Moines, Iowa. $TT\ 1.1: SP\ 1.1$.—May 1920 to Jan. 1921, May to Nov. 1921, June 1922 to Jan. 1923, June 1923 to Jan. 1924, June 1924 to Jan. 1925 and summer 1925 with Iowa State Highway Comm., as instrumentman on surveys and construction, after June 1922 having responsible charge of field parties staking out, estimating, classifying and directing work, supervising building of state and county roads (approx. 50 miles) (under County Engr. in charge). $TT\ 2.1: SP\ 0.5: P\ 1.6$.—Nov. 1921 to Jan. 1922 Instrumentman with B. B. Hansen & C. P. Goplerud, Engrs., Osage, Iowa, on flowage survey for hydro-electric development. $TT\ 0.1: SP\ 0.1$.—March 1926 to March 1927 and summer 1927 Asst. County Engr., Mitchell County, Iowa, in charge of field parties on preliminary surveys and road construction and office work in laying out, designing and estimating highways (approx. 30 miles). $TT\ 1: P\ 1: RC\ 1: D\ 0.3$.—June 1928 to March 1929 Engr.-Inspector for Consoer, Older & Quinlan, Cons. Engrs., Chicago, inspecting storm- and sanitary-sewer and concrete-pavement construction, assisting in investigation of large relief sewer system, checking trunk lines and designing lateral system. $TT\ 0.7: P\ 0.7: RC\ 0.2: D\ 0.2$.—March 1929 to date Engr., Cement Products Bureau, Portland Cement Association, Chicago, specifications, building codes and technical promotion problems of fire-resistant construction for residences and apartment houses. $TT\ 1.1: P\ 1.1: RC\ 1.1$.— $TT\ 10.1: SP\ 1.7: P\ 8.4: RC\ 2.4: D\ 0.6$. Refers to A. W. Consoer, W. E. Hart, F. Kerekes, L. F. Van Hagan, G. E. Warren, R. R. Zack.

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(5) **DANIELS, FRANCIS WALLIN**, 1902 Cedric Rd., Baltimore, Md. (Age 31. Born Gilbertsville, N. Y.) 1921 C. E., Cornell Univ. $TT\ 4: P\ 4$.—April 1917 to Dec. 1918 with U. S. Navy.—Sept. 1921 to April 1924 Engr. for A. Torrance, Contr., Norwich, Conn., field and office work, surveying, setting lines and grades, estimating, designing and detailing. $TT\ 2.6: P\ 2.6: RC\ 1.5: D\ 1.5$.—April 1924 to date with The H. K. Ferguson Co., Cleveland.

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Ohio, as Concrete Designer, on structural design for large warehouse and bakery for Kroger Grocery & Baking Co., Cleveland, and several 5-story and basement concrete buildings for Selby Shoe Co., Portsmouth, Ohio, etc.; some structural steel designing and Squad Leader in direct charge of layout, design and drafting on a number of projects; 1927 (7 months) had charge of layout and design of plant for Westvaco Chlorine Products, involving remodeling and additions to plant; latter part of 1928 Acting Chf. Draftsman, Cleveland office; since Dec. 1928 Project Engr. on plant for Western Elec. Co., Inc., Baltimore, Md., in direct contact with owners' engineers in development, and has been in direct and responsible charge of design of all units of project (188 acres), including bulkhead, dredging for ship channel, grading, construction of power house, two large manufacturing buildings, numerous smaller buildings, railroad track (several miles), concrete pavements, seven concrete underpasses under city highway, artesian wells, etc. *TT 6: P 6: RC 4: D 3.5.* — *TT 12.6: P 12.6: RC 5.5: D 5.* Refers to W. R. Eberhardt, C. H. Fowler, H. J. Hassler, C. A. Latimer, J. M. Russell, O. C. Spurling, R. E. J. Summers, J. W. Taussig, F. C. Wolfe.

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(1) **DEDEL, DIRK ADRIANUS**, 245 Wolf's Lane, Pelham, N. Y. (Age 31. Born The Hague, Holland.) 1922 B. S. in C. E., Drexel Inst. *TT 4: P 4.* — Jan. to Sept. 1918 Draftsman, Link Belt Co., Philadelphia, Pa., on conveying machinery and their foundations. *TT 0.4: SP 0.4.* — March 1923 to Sept. 1924 Sales Engr. with Lewis N. Lukens (A. Taylor Co.), Philadelphia, estimating, making plans and selling reinforcing steel, having charge of branch office. *TT 1.2: SP 0.4: P 0.8: RC 0.8.* — Oct. 1924 to date with Amburser Constr. Co., New York City, until Sept. 1928 as Draftsman and Designer, estimating, drafting and designing hydro-electric power, water supply and flood-control developments, then Chf. Draftsman directing same work. *TT 4.8: SP 0.5: P 4.3: RC 2.3: D 3.3.* — *TT 10.4: SP 1.3: P 9.1: RC 3.1: D 3.3.* Refers to E. H. Burroughs, Jr., C. V. Davis, F. Hudson, M. den H. Kolyn, H. M. Nabstdt, L. A. Robb, E. Sudler.

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(4) **DEHNICK, JOSEPH ALBERT**, 40 East Oakland Ave., Pleasantville, N. J. (Age 34. Born Philadelphia, Pa.) 1923 C. E., Lehigh Univ. *TT 4: P 4.* — Feb. to Sept. 1923 Transitman, until March 1923 with W. W. Lindsay Co., Philadelphia, Pa., then with Remington & Vosbury, Engrs., Camden, N. J. *TT 0.3: SP 0.3.* — Feb. to May 1924 Rodman with W. I. Risley, Civ. Engr., Atlantic City, N. J. *TT 0.2: SP 0.2.* — May 1924 to date with James Ferry Co., Inc., Contrs. and Engrs., Atlantic City, until Jan. 1927 as Res. Engr. on concrete building construction for various projects and on foundations, then Chf. Engr. on foundations, bridges, sewage-disposal plants, ocean piers, sea walls, etc., design and construction and at present Gen. Supt. *TT 5.6: P 5.6: RC 1.5: D 1.5.* — *TT 10.1: SP 0.5: P 9.6: RC 1.5: D 1.5.* Refers to H. I. Eaton, R. J. Fogg, J. W. Hackney, W. I. Risley, H. Robinson, J. Strollo.

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(9) **DIX, WALTER SAMUEL**, 1110 Collingwood Ave., Toledo, Ohio. (Age 31. Born Wolverton, Buckinghamshire, England.) July-Dec. 1918 Record Clerk, Research Eng. Dept., Willys-Overland Co., Toledo, Ohio. *TT 0.2: SP 0.2.* — Jan. 1919-June 1921 Draftsman, with McCamic & Batchell, Industrial Engrs., Glass Furnace Specialists, Toledo, complete plant layouts, furnace, lehr and kiln design and construction, supervision of masonry and steel construction. *TT 1.9: SP 0.6: P 1.3: RC 1: D 1.* — April to Nov. of years 1922-1924 on marine construction, estate of Arthur Smith, Put-in-Bay, Ohio, soundings, charts, dredging and pile-driving operations, dock and retaining-wall construction. *TT 2.1: P 2.1: RC 2.1: D 1.2.* — Nov. 1921 to March 1922 Marine Archt. with Frank Stranahan, Toledo, design and supervision of construction of racing ice yachts. *TT 0.8: P 0.8: RC 0.8: D 0.8.* — Nov. 1924 to date with R. H. Randall & Co., Inc., Geodetic and Topographic Engrs., Toledo, until Jan. 1925 as Cartographer, then Asst. Engr. in charge of map production, and research for development for new methods of production, and since July 1928 Engr. in charge of map reproduction and publication, Toledo office, including reproduction of standard 200-ft. scale maps of city surveys of Pittsburgh, Pa., Columbus and Akron, Ohio, Schenectady and Albany, N. Y., Pontiac, Mich., Willacy County, Tex., etc., with geodetic computations for control and checking of same. *TT 5.3: P 5.3: RC 5: D 2.5.* — *TT 9.9: SP 0.9: P 9: RC 8.4: D 5.* Refers to R. C. Chaney, H. P. Jones, R. H. Randall, A. H. Smith, G. D. Whitmore.

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(7) **DOUGAN, HENRY KNOX**, 1315 Cleveland Ave., St. Paul, Minn. (Age 46. Born St. Paul, Minn.) 1908 C. E., Univ. of Minn. *TT 4: P 4.* — May to Nov. 1901 Chainman, Mason City & Ft. Dodge Ry. Co. *TT 0.2: SP 0.2.* — Summers (while student) with a mining engineer, as Inspector of drills, Rodman on railway construction, Res. Engr. in responsible charge of light railway construction (approx. 16 miles). — Nov. 1901 to Sept. 1902 Chainman and Rodman, and June 1906 to Dec. 1907 Res. Engr. (10- to 15-mile residency) on

earthwork construction, Great Northern Ry. Co. TT 1.9: SP 0.4: P 1.5: RC 1.5.—June 1908 to Oct. 1909 Res. Engr., Idaho & Washington Ry. Co., in charge of small party, also Transitman and Draftsman, on location survey; in charge of construction on 8-mile residency, involving rock work and 1,600-ft. tunnel and some design of tunnel reinforcement. TT 1.2: SP 0.2: P 1: RC 1: D 0.2.—Oct. 1909 to April 1910 Res. Engr., G. N. Ry. Co., on railway-grade construction (10 miles earth and rock work). TT 0.5: P 0.5: RC 0.5.—April 1910 to May 1911 in private practice, planning small irrigation projects, village water supply, surveying town sites and mines in vicinity of Oroville, Wash. TT 1.1: P 1.1: RC 1.1: D 0.5.—May to Aug. 1911 Timekeeper, Oliver Iron Min. Co., Hibbing, Minn.—Aug. 1911 to date with G. N. Ry. Co. as follows: Aug. 1911 to Sept. 1913 Asst. Engr., 1 year on construction of 10-mile residency and completion of additional 10-mile residency involving heavy earthwork and completion of track, and 1 year on partial construction of 10-mile residency, involving short earth tunnel, about 12 miles of location, etc.; Sept. 1913 to Jan. 1914 Transitman and Draftsman; Jan. to Dec. 1914 Asst. Engr., preparing pre-inventory data for Federal valuation; Jan. 1915 to Nov. 1918 Office Engr., in charge (under Valuation Engr.) of preparing inventories and analyzing costs in connection with Federal valuation; Nov. 1918 to June 1925 Asst. Valuation Engr., preparing valuations of minor properties, collecting cost data, conferring with Interstate Commerce Comm. Engrs., preparing and giving testimony for valuation (over \$400,000,000) before Interstate Commerce Comm.; June 1925 to Dec. 1929 Asst. Statistician and Asst. Gen. Auditor, special accounting work frequently involving engineering valuation, field and office railway investigation; since Jan. 1930 Executive Asst., reporting to Pres. for specially assigned duties of economic and engineering nature. TT 13.5: SP 0.4: P 13.1: RC 13.1: D 0.2.—TT 22.4: SP 1.2: P 21.2: RC 17.2: D 0.9. Refers to F. Bass, R. Budd, A. H. Hogeland, D. J. Kerr, A. Marston, R. A. Thompson.

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(14) **EASON, RALPH LEE**, 2840 Watson Rd., St. Louis, Mo. (Age 26. Born St. Louis, Mo.) 1927 B. S., Washington Univ. TT 4: P 4.—Summers 1918-1921 office work, some drafting, Feb. 1922 to Sept. 1923 and summers 1924-1926 Draftsman, detailing reinforced concrete, and June 1927 to date Chf. Engr., designing and detailing reinforced concrete and structural steel, all for Koerner Eng. Co., St. Louis, Mo. TT 3.6: SP 0.8: P 2.8: D 2.8.—TT 7.6: SP 0.8: P 6.8: D 2.8. Refers to L. A. Hoync, C. A. Koerner, C. W. S. Sammelman, E. O. Sweetser, J. L. Van Ornum.

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(5) **EVANS, RICHARD TRANTER**, 1368 Euclid St. N. W., Washington, D. C. (Age 48. Born Washington, D. C.) July 1917 to July 1919 1st Lieut., Engrs., U. S. Army, topographic map work on Pacific Coast and after Aug. 1918 in France with 29th Engrs. (Surveying and Map Reproduction Regt.); Dec. 1919 commissioned Capt., Engr. Reserves. TT 2: P 2: RC 1.4.—July 1899 to date (except July 1917 to July 1919) Topographer (later Topographic Engr.), U. S. Geological Survey, Washington, D. C., in charge of field parties on topographic mapping and office work on maps; July 1899 appointed Traverseman, Hermosa Quadrangle, S. Dak., and Feb. 1903 became Topographic Aid, Jerome Quadrangle, Ariz.; July 1904 to Dec. 1905 had charge of mapping, Medicine Box Quadrangle, Wyo., and Shinumo Quadrangle in Grand Canyon of Arizona; May to Oct. 1925 and June to Oct. 1926 Acting Supt., Zion National Park, Utah, on location and maintenance of roads, trails and buildings, and assisted on preliminary surveys for Zion-Mt. Carmel highway; Jan. 1927 to Nov. 1928 Supt., Hawaii National Park, on location of roads, trails and building, and since June 1929 mapping Zion National Park. TT 27: SP 1.1: P 25.9: RC 24.8.—TT 29: SP 1.1: P 27.9: RC 26.2. Refers to W. M. Beaman, R. W. Berry, C. H. Birdseye, R. A. Brown, E. M. Douglas, T. G. Gerdine, A. F. Hassan, F. A. Kittredge, T. P. Pendleton, A. B. Purton, C. L. Sadler, G. S. Smith, J. D. Staack.

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(5) **FAHRNEY, PAUL LANIER**, 4200 O'Donnell St., Baltimore, Md. (Age 32. Born Grove, Okla.) 1920 A. B., Univ. of Okla. TT 2: P 2.—Oct. 1920 to June 1929 with Standard Oil Co. of California, in charge of Highway Research Div., at San Francisco, Cal., on asphalts and road oils research, designing mixtures, testing aggregates, etc., and (after May 1922) Sales Engr., asphalts and road oils, in Oregon. TT 8.7: P 8.7: RC 8.7.—June 1929 to date Dist. Engr., American Bitumuls Co., in charge of plant, production and sales. TT 0.7: P 0.7: RC 0.7.—TT 11.4: P 11.4: RC 9.4. Refers to P. L. Boney Steele, L. P. Campbell, R. D. Hoyt, C. L. McKesson, R. M. Morton, C. H. Purcell.

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(13) **FICKERT, MARSHALL MARRON**, 1060 Green St., San Francisco, Cal. (Age 23. Born San Francisco, Cal.) 1930 A. B., School of Eng., Stanford Univ. TT 4: P 4.—Jan. 1930 to date drafting and shop work, Western Pipe & Steel Co., South San Francisco, Cal. TT 0.1: SP 0.1.—TT 4.1: SP 0.1: P 4. Refers to C. D. Marx, L. B. Reynolds, J. H. Wallace, J. B. Wells.

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(1) **FISHGRUND, HENRY**, 2991 Ripple St., Brooklyn, N. Y. (Age 38. Born New York City.) 1911 B. E., Cooper Union Day School of Sci. TT 4: P 4.—Jan. 1912 to Nov. 1913 with New York Central R. R. Co., Weehawken, N. J., as Chainman, Rodman, and Transitman in charge of party on surveys, plans, line and grade for track, property, bridges, culverts, etc. TT 1: SP 0.8: P 0.2: RC 0.2: D 0.1.—Nov. 1913 to Nov. 1917 Jun. Engr., Public Service Comm., 1st Dist., New York City, in charge of field party giving line and grade for subway construction; location and restoration of subsurface structures; in responsible charge of design and construction to meet conditions, Route 19-22, Sec. 1, East 138th St. and Southern Boulevard, Bronx, N. Y. TT 4: P 4: RC 4: D 1.—Nov. 1917 to April 1918 and June 1918 to Feb. 1920 Draftsman, Hercules Powder Co., Wilmington, Del.; designed pumping station and pipe lines for manufacturing and fire protection and buildings for manufacture of smokeless powder and made topographic map of plant at Kenilworth, N. J. TT 2.1: P 2.1: RC 2.1: D 2.1.—April to June 1918 Surveyor, Engr. Corps, U. S. War Dept., New York City; made hydrographic surveys, triangulation and computation for river and harbor improvement, New York City. TT 0.1: SP 0.1.—Feb. to June 1920 Asst. Engr., National Aniline & Chemical Co., New York City, wrote engineering specifications of materials and methods of construction for proposed plant for manufacture of synthetic indigo at Marcus Hook, Pa. TT 0.8: P 0.3: RC 0.3: D 0.3.—Sept. 1926 to Jan. 1927 Draftsman with Stone & Webster, Inc., Boston, Mass., made designs and plans for pump house, water mains, sprinkler system and steam lines for remodeled plant of American Sugar Refining Co., Brooklyn, N. Y. TT 0.3: P 0.3: RC 0.3: D 0.3.—May to Aug. 1927 Draftsman, U. S. Lighthouse Service, Staten Island, N. Y.; made drawings of lanterns for lighthouses and beacons. TT 0.3: P 0.3: RC 0.3: D 0.3.—Aug. 1927 to date Jun. Engr., Asst. Engr., Board of Transportation, New York City, in responsible charge as Chf. of field party and Asst. to Sec. Engr. on subway construction and restoration of subsurface structures; design to meet conditions in congested area, Route 45, Sec. 2, Nassau and Broad Sts., New York City. TT 2.5: P 2.5: RC 2.5: D 0.5.—TT 14.6: SP 0.9: P 13.7: RC 9.7: D 4.6. Refers to A. E. Clark, E. A. Groves, J. F. Krakauer, A. Lyle, R. S. Saunders, A. F. Simpson, S. S. Stevens.

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(13) **FOWLE, ROYAL EDGAR**, 108 Jefferson St., Watsonville, Cal. (Age 30. Born Bellefontaine, Ohio.) Student, Arts and Civ. Eng., Ohio State Univ. (1921-1922) and Civ. Eng., Cal. Inst. Tech. (1922-1926). TT 2: P 2.—1922 to 1925 (while student) Chainman and Rodman for Prof. William W. Michael, California Institute of Technology, and (March to Sept. 1925) on reinforced concrete design and inspection of buildings for U. S. Government.—June to Dec. 1926 Rodman and Instrumentman, Atchison, Topeka & Santa Fe Ry. TT 0.3: SP 0.3.—Dec. 1926 to Jan. 1928 Chf. of Party and Draftsman, Petit & Robbins, Ventura, Cal., irrigation and drainage, with structures, on subdivision, city improvement and county highway work. TT 1: P 1: RC 1: D 0.3.—Jan. 1928 to June 1929 with City of Ventura, designing, drafting, testing materials, city improvement work, water supply, sewerage and sewage treatment. TT 1.5: P 1.5: RC 1.5: D 0.8.—June to Nov. 1929 with Monterey County, on bridge design and location and testing materials. TT 0.4: P 0.4: RC 0.4: D 0.2.—Nov. 1929 to date with Granite Rock Co., design and testing materials. TT 0.3: P 0.3: RC 0.3: D 0.1.—TT 5.5: SP 0.3: P 5.2: RC 3.2: D 1.4. Refers to R. L. Anderson, S. A. Chapman, F. J. Converse, W. W. Michael, F. Thomas.

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(1) **GAMBLE, CLARKE WILLIAM**, 150 Broadway, New York City. (Age 52. Born Lachute, Que., Canada.) Licensed Prof. Engr., British Columbia, Canada, 1907 B. Sc., McGill Univ. TT 4: P 4.—Nov. 1893-Feb. 1894 Rodman and Chainman with F. C. Gamble. TT 0.2: SP 0.2.—March 1894-Sept. 1897 Apprentice, Albion Iron Works, Victoria, B. C., Canada, in pattern and machine shops and drafting office. TT 1.8: SP 1.8.—Nov. 1897-July 1898 Mechanic, Expedition to Yukon Gold Fields (promoted by Capt. Armstrong), building sternwheel steamer, installing boilers, engines, etc. TT 0.4: SP 0.4.—Oct. 1898 to March 1899 and May to Oct. 1899 Second Engr., 6 months on Canadian Pacific Navigation Co.'s steamers, then on Hudson Bay Co. steamer on Stikine River, Alaska, and British Columbia. TT 0.5: SP 0.5.—April 1901 to April 1902 Jun. Engr., Canadian Pacific Ry. trans-pacific ship *Empress of China*. TT 0.5: SP 0.5.—May 1902-April 1903 Draftsman, C. W. Hunt Co., West New Brighton, N. Y. TT 0.5: SP 0.5.—Sept. 1903-April 1907 student, McGill Univ.—May 1907 to June 1915 with Public Works Dept., British Columbia, until June 1908 as Asst. to Public Works Engr., in charge of design and construction of roads, wharves and bridges, then Engr.-in-Chg. on design and erection of bridges. TT 8: P 8: RC 8: D 8.—April 1916-June 1918 Lieut., Canadian Engrs. and Canadian Ry. Troops, in Canada, England and France. TT 2.2: P 2.2: RC 2.2.—June 1919-May 1924 Managing Director, Layard, Swan & Gamble, Ltd., Engrs. and Contrs., Sidney, B. C., owning and

operating machine shop, marine ways, etc.; chiefly on design and installation of pumping plants, marine railways and design and construction of farm-drainage systems. *TT 5: P 5: RC 5: D 5.*—June 1924–Nov. 1926 Cons. Engr. at Victoria, B. C., surveying timber limits, locating and building roads suitable for heavy trucks for D. H. Macdowell estate, logging railroads, etc. *TT 2.5: P 2.5: RC 2.5: D 2.5.*—Dec. 1926 to date Res. Engr. with Waddell & Hardesty, Cons. Engrs., New York City, on Mississippi River bridge at Cairo, Ill., and (since Jan. 1930) on borings for proposed bridge over Bayou St. John, New Orleans, La. *TT 3.3: P 3.3: RC 3.3.*—*TT 28.8: SP 8.8: P 25: RC 21: D 15.5.* Refers to F. DeSchauensee, S. Hardesty, R. C. Kellogg, R. W. Macintyre, H. F. Nelson, J. A. L. Waddell, W. G. Williams.

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(6) **GROSSHANS, DONOVAN PORTER**, 901 City Bank Bldg., Youngstown, Ohio. (Age 30. Born East Liverpool, Ohio.) 1926 B. C. E., Ohio State Univ. *TT 4: P 4.*—June 1917 to July 1918 Rodman, Jan. to Sept. 1919 Transitman, June 1921 to Sept. 1923 and summer 1924 Field Engr., and summer 1925 Engr. Inspector, Columbiana County (Ohio) Highway Dept. on state and county highways. *TT 3.8: SP 1: P 2.3: RC 2.3.*—July 1918 to Jan. 1919 Private, U. S. Army Engrs., Camp A. A. Humphreys, Va., being Rodman on stadia survey and building layout work. *TT 0.2: SP 0.2.*—July to Dec. 1926 Draftsman and Estimator, Mount Vernon (Ohio) Bridge Co., detailing and estimating structural steel. *TT 0.3: SP 0.3.*—Jan. 1927 to Feb. 1928 San. Engr., Woodland Borough, Pa., on sanitary sewers, etc. *TT 1.2: P 1.2.*—March 1928 to date Asst. Engr., Mahoning Valley San. Dist., until Dec. 1928 on concrete design 9-span concrete arch bridge (1 000 ft.), 6-span concrete beam bridge (260 ft.), and detail office location for 36-in. steel pipe lines (10 miles); since Jan. 1929 Office Engr. in charge of design, plans and estimates for 42-in. steel pipeline (5 miles), reinforced concrete covered reservoir (30 000 000 gal.), bituminous macadam road (2 miles), foundation for standpipe (diameter, 60 ft., 72 ft. high) and 20-in. cast-iron pipeline (4½ miles), and of plans and estimates for 40 000 000-gal. filter plant and pumping station, all for water-purification project (estimated cost \$9 500 000). *TT 2: P 2: RC 1.2: D 2.*—*TT 11: SP 1.5: P 9.5: RC 3.5: D 2.* Refers to C. B. Cornell, W. H. Dittoe, G. G. Dixon, J. D. K. Lyman, C. T. Morris, A. L. Reeder, R. C. Sloane.

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(8) **HANSEN, JAMES HAROLD**, 7836 South Ada St. Chicago, Ill. (Age 27. Born Mandan, North Dakota.) 1921–1922 and Feb. to July 1924 and Sept. to Nov. 1925 student, Univ. of Purdue. *TT 1: P 1.*—Feb. 1923 to Feb. 1924 and July 1924 to Sept. 1925 Rodman, Illinois Central R. R., on location, maintenance and construction. *TT 1.1: SP 1.1.*—Nov. 1925 to May 1926 Chf. of Party on subdivision layout for Dominion Engrs., Kissimmee, Fla. *TT 0.3: SP 0.3.*—June 1926 to April 1928 Promotion and Sales Engr., The Dixie Culvert & Metal Co., Atlanta, Ga., manufacturers of corrugated culverts, storage tanks, etc. *TT 1.4: SP 0.4: P 1: RC 1.*—June to Aug. 1928 Chf. of Party, Kauffman & Son, Civ. Engrs., Atlanta, Ga., on topographic survey. *TT 0.1: P 0.1.*—Aug. to Sept. 1928 Supt. of Constr. of community stores (\$15 000) for Mrs. Susie M. Caldwell, Atlanta. *TT 0.1: P 0.1: RC 0.1: D 0.1.*—April to June 1928 and Sept. 1928–Feb. 1929 ill.—Feb. 1929 to Jan. 1930 with Turner Constr. Co., New York City, in charge of lines and grades on construction (\$3 500 000). *TT 0.9: P 0.9: RC 0.9.*—Jan. 1930 Field Engr., H. K. Ferguson Constr. Co., on \$100 000 garage. *TT 0.1: P 0.1: RC 0.1.*—*TT 5: SP 2.9: P 2.1: RC 2.1: D 0.1.* Refers to E. K. Abberley, W. A. Knapp, H. T. Larsen, G. E. Lommel, L. F. Reynolds.

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(5) **HART, PHILIP CHARLES**, 2707 Second Ave., Richmond, Va. (Age 27. Born Columbus, Ga.) Prior to 1928 (4 years) cooperative student, Georgia School of Technology. —June to Aug. 1922 Arch. Draftsman with T. W. & E. O. Smith, Archts., Columbus, Ga., residential plans. *TT 0.1: SP 0.1.*—Aug. to Dec. 1922 and Dec. 1924 to Feb. 1925 Mech. Draftsman, Centennial Cotton Gin Co., Columbus, drafting plans for cotton-gin houses and machinery and detailing machinery layouts and building plans. *TT 0.5: SP 0.3: P 0.2: D 0.2.*—Dec. 1922 to Oct. 1924 Draftsman, City Engr.'s office, Columbus, topographic maps, design of storm-sewerage system and light construction. *TT 1.3: SP 0.7: P 0.6: RC 0.1.*—June to Aug. 1925 Rodman, Southern Ry. Co. *TT 0.3: P 0.3.*—Sept. 1925 to Nov. 1926 Mech. Draftsman, B. F. Sturtevant Co., Atlanta, Ga., designing heating and ventilating systems, steam turbines and boiler layouts. *TT 0.8: P 0.8: RC 0.1: D 0.1.*—June to Aug. 1927 Draftsman, U. S. Army Engrs., Chattanooga, Tenn., topography on aerial photographs. *TT 0.3: P 0.3.*—Sept. 1927 to Nov. 1928 Draftsman, Mapping Div., Eng. Dept., Atlanta, did finished drafting on \$400 000 map of city. *TT 1: P 1: D 0.1.*—Feb. to Aug. 1929 Draftsman, Chf. Engr.'s office, Frisco Lines, St. Louis, Mo., maps, etc. *TT 0.5: P 0.5.*—Aug.

1929 to date with Chf. Engr.'s office, Chesapeake & Ohio Ry. Co., Richmond, Va., drafting and maps. TT 0.6: P 0.6.—TT 5.4: SP 1.1: P 4.3: RC 0.2: D 0.4. Refers to R. P. Black, G. K. Davis, W. A. Hansell, F. G. Jonah, V. B. W. Poulsen.

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(13) **HENRY, RODNEY WILLIAM**, 135 Pacheco St., San Francisco, Cal. (Age 34. Born Napa, Cal.) 1917 B. S. in C. E., Univ. of Cal. TT 4: P 4.—1917 to 1920 Jun. Lieut., U. S. Navy.—1920 to 1923 Designing Engr. with H. J. Brunnier, designing and general structural drafting. TT 3: P 3: D 1.—1923 to 1924 Engr. in charge of construction, California State Life Insurance Co., at Sacramento, Cal. TT 1.5: P 1.5: RC 1.5.—1924 to date Structural Engr., 4½ years with R. W. Molier, San Francisco, designing and in charge of field engineering and since then with Shell Oil Co., Head Office, designing. TT 5.5: P 5.5: RC 5.5: D 2.5.—TT 14: P 14: RC 7: D 3.5. Refers to H. W. Boilin, H. J. Brunnier, F. A. Johnson, R. F. Lyman, C. J. Nobmann, A. V. Saph, W. H. Smith.

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(10) **HOLLAND, PAUL LEACH**, 616 Johnston Bldg., Charlotte, N. C. (Age 42. Born Addor, N. C.) 1908 graduate, U. S. Naval Acad. TT 4: P 4.—June 1908 to Dec. 1919 with U. S. Navy, until Dec. 1915 as Commissioned Officer on various line and engineering work, including that of Chf. Engr. of a battleship, Dec. 1915 to March 1917 on retired list, and after March 1917 Member, Joint Army and Navy Board of Inspection, 6th Naval Dist., and Instructor, Dept. of Elec. Eng., Physics and Chemistry, U. S. Naval Acad. TT 7.2: SP 3: D 4.2.—Dec. 1919 to April 1922 Gen. Supt., Georgia-Alabama Power Co., Albany, Ga., in charge of operation and maintenance of five hydro-electric and five steam-electric plants, involving civil, mechanical and electrical work. TT 2.3: P 2.3: RC 2.3.—Aug. 1922 to April 1924 Asst. Engr., Carolina Power & Light Co., Raleigh, N. C., surveying, topographic mapping, cost analysis and estimates. TT 1.7 P 1.7: RC 1.7.—April 1924 to Jan. 1925 Chf. Engr. and Branch Mgr., Blue Ridge Power Co., Spartanburg, S. C., on layout and construction of distributing system, power sales, electrical merchandising. TT 0.7: P 0.7: RC 0.7.—Feb. 1925 to date Staff Engr. with Mees & Mees, Cons. Engrs., Charlotte, N. C., resident engineering, hydro-electric and steam-electric plants, electrical design, rate investigations, appraisals and hydraulic power computations. TT 5.2: P 5.2: RC 5.2: D 1.—TT 21.1: SP 3: P 18.1: RC 10: D 1. Refers to D. M. Garber, A. V. Greaves, C. A. Mees, A. H. Vanderhoof, C. E. Waddell, J. T. Wardlaw.

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(10) **HOLLAND, WILLIAM HOLMES**, Rosedale, Miss. (Age 27. Born Meridian, Miss.) 1925 B. S. in Civ. Eng., Miss. A. and M. Coll. TT 4: P 4.—June to Sept. 1925 and Sept. 1928 to Nov. 1929 with Corps of Engrs., U. S. Army, Mississippi River Comm., as Inspector on hydraulic levee construction, levee cross-sectioning, calculations, etc., and (1 year) Chf. Inspector on all projects in northern area south of Rosedale. TT 1.4: SP 0.3: P 1: RC 1.—Oct. 1925 to May 1928 Asst. Engr., until March 1926 with Florida Tropics Development Co., on subdivision, city planning, street and sidewalk construction, drainage and map making, then with Jones, Butler & Johnson, Osceola County Engrs., on highway location, cross-sectioning, bridge construction, establishing grades, calculating, estimates and inspection. TT 2.1: SP 0.5: P 1.6: RC 1.6.—May to Sept. 1928 Engr. at Meridian, Miss., surveying, map making and subdivision. TT 0.8: P 0.8: RC 0.8: D 0.8.—Nov. 1929 to date Engr., Orleans Dredging Co., on hydraulic levee construction, enlargement, cross-sectioning, earthwork calculations, establishing grades, etc. TT 0.3: P 0.3: RC 0.3.—TT 8: SP 0.8: P 7.2: RC 3.2: D 0.3. Refers to T. G. Gladney, J. C. H. Lee, H. W. Nugent, R. C. Pierce, J. R. Wilbanks.

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(15) **HOOPER, CARSWELL ORAN**, 431 Hibernia Bank Bldg., New Orleans, La. (Age 41. Born Pittsburg, Tex.) Jan. 1906 to Oct. 1907 Chainman, Rodman, Topographer and Leveler, Kansas City Southern, Louisiana Pacific and Lake Charles & Northern R. Rs. TT 0.9: SP 0.9.—Oct. 1907 to May 1913 Rodman, Instrumentman and Asst. Engr., and May 1913 to April 1921 Roadmaster and Terminal Engr., Southern Pacific R. R. Co., Louisiana Lines. TT 9.2: SP 4.3: P 4.9: RC 4.9.—April 1921 to May 1925 Asst. Engr. and Dist. Engr., International Great Northern R. R. Co. TT 4: P 4: RC 1.7: D 2.5.—May 1925 to Aug. 1927 Vice-Pres. and Chf. Engr., Roberts Constr. Co., Inc., on railroad engineering and construction. TT 2.3: P 2.3: RC 2.3.—Aug. 1927 to date member of firm, Hooper & Picou, Gen. Contrs. and Industrial Engrs.; designed and constructed plants of Georgia-Louisiana Corporation, and of Paper Makers Chemical Co., at Marrero, La., railroad yards and storage facilities for Celotex Co., plant of International Lubricant Corporation, New Orleans, La., and railroad yards for American Creosote Works, Inc., Jackson, Tenn. TT 2.6: P 2.6: D 2.6.—TT 19: SP 5.2: P 13.8: RC 8.9: D 5.1. Refers to E. D. Akers, T. S. Bond, H. G. Lytle, F. S. Schwinn, C. R. Shaw.

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(1) **HOSTRUP, CHRISTIAN FREDRICK**, 50 Church St., New York City. (Age 34. Born Lyons, Iowa.) 1919 B. S. E. (Mech. Eng.), Univ. of Mich. TT 4: P 4.—Aug. to Oct. 1919 with H. H. Atwell, Ann Arbor, Mich., making surveys of Henry Ford estate in Dearborn, Mich. TT 0.1: SP 0.1.—Oct. 1919 to April 1921 on sanitary sewer system and disposal plant for Monona, Iowa, until April 1920 with J. G. Thorne, Clinton, Iowa, on survey and design, then with the Town in charge of construction. TT 1.5: P 1.5: RC 1.5: D 0.2.—April to Dec. 1921 in charge of construction of sanitary sewer system and disposal plant for Preston, Iowa, also in charge of extensions to water-works system. TT 0.6: P 0.6: RC 0.6: D 0.3.—Dec. 1921 to June 1922 with City Engr., Clinton, in charge of paving work; assisted on appraisal of water-works system. TT 0.5: SP 0.1: P 0.4: RC 0.4: D 0.2.—June 1922 to date with Pitometer Co., New York City, as follows: June to Nov. 1922 Asst. on water-waste surveys in Bloomington, Ill., Worcester, Boston and Somerville, Mass.; Nov. 1922 to Aug. 1929 in charge of water-waste surveys in Louisville, Ky., Richmond, Va., Columbia, S. C., Ogden, Utah, Hartford and New Britain, Conn., Elmira, N. Y. and Toledo, Ohio; Feb. 1927 to Aug. 1929 also on study of trunk mains in St. Louis, Mo.; since Aug. 1929 Dist. Representative, in charge of special tests in Newark, N. J., and of survey of Hudson, N. Y. TT 7.4: SP 0.2: P 7.2: RC 7.2.—TT 14.1: SP 0.4: P 13.7: RC 9.7: D 0.7. Refers to E. D. Case, E. S. Cole, C. H. Currie, C. T. Johnston, G. N. Schoonmaker, J. A. Van den Brook, E. K. Wilson.

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(1) **HUNTINGTON, EVERETT SAMUEL**, 43 Lafayette St., New Rochelle, N. Y. (Age 36. Born Denver, Colo.) 1913 to 1916 and Feb. 1920 to June 1921 student, Coll. of Eng., Univ. of Colorado. TT 2: P 2.—Nov. 1917 to Feb. 1919 with U. S. Army, Air Service, surveyed site and drew plans for and worked on construction of flying field at Park Place, Tex. TT 0.4: P 0.4.—June 1916 to Nov. 1917 and Feb. 1919 to Feb. 1920 Masonry Inspector, Bridge Dept., Illinois Central R. R. Co., Chicago, Ill., acting as Asst. Inspector on Rock River Bridge, Rockford, Ill., and Inspector on bridges in various other cities, instructing new Foremen, etc. TT 2.3: SP 0.8: P 2: RC 1.—June 1921 to Dec. 1922 Contr., Boulder, Colo., designed and built several residences, fraternity houses and apartments. TT 1.6: P 1.6: RC 1.6: D 1.6.—Dec. 1922 to March 1923 Draftsman for Col. H. S. Crocker, Denver, Colo., on design of 16th Street Viaduct and Colorado National Bank Bldg., Denver. TT 0.8: SP 0.2.—March 1923 to March 1924 Superv. Engr., Stearns-Roger Mfg. Co., Denver, Colo., in charge of construction of Locomotive Repair Shop (\$2 500 000) built for C. B. & Q. R. R. Co. TT 1: P 1: RC 1.—March 1924 to Sept. 1929 Pres., The General Constr. Co., Denver, Colo., designing, superintending and estimating on bridges and buildings, including U. S. Veterans Hospitals, Tucson, Ariz., Portland, Ore. gymnasium, Western State Coll., Gunnison, Colo., Dormitory, New Mexico School for Deaf and Dumb, Santa Fe, N. Mex., First Baptist Church, Boulder, Colo., Denver Ice & Cold Storage Plant, Welshire Country Club, Marston Lake filtration plant, Denver, U. S. Post-Offices, etc. TT 5.5: P 5.5: RC 5.5.—Oct. 1929 to date Res. Mgr., The W. P. Thurston Co., Richmond, Va., in charge of construction of barracks, Fort Slocum, N. Y. TT 0.5: P 0.5: RC 0.5.—TT 13.5: SP 0.5: P 13: RC 9.6: D 1.6. Refers to I. C. Crawford, H. S. Crocker, C. L. Eckel, W. C. Huntington, M. S. Ketchum, T. E. Leahy, J. S. Means.

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(11) **HUTCHINS, WILLIAMS RUTHERFORD**, 934 West Culver St., Phoenix, Ariz. (Age 43. Born Athens, Ga.) 1908 B. S. in Civ. Eng., Univ. of Ga. TT 4: P 4.—1908 to 1910 Rodman, Arizona Copper Co. and Shannon R. R., Ariz. TT 1: SP 1.—1910 to 1912 Trans-sit, Arizona Copper Co. and Arizona & New Mexico R. R. TT 1: SP 1.—1912 to 1914 in charge of engineering field forces, Arizona Copper Co. (concentrator, electric haulage, underground mining, topography, railroad, new smelter layout and construction). TT 2: P 2: RC 2: D 1.—1914 to 1915 Engr. with Hoyt & Merrill, Contrs., in Arizona. TT 1: P 1.—1915 to 1916 in charge of field party, Arizona State Highway Dept. TT 1: P 1: RC 1.—1916 to 1920 in private practice as Engr. and Contr., mineral surveying, concrete and highway construction, Ariz. (4 years) and Locating Engr., Eastland County (Tex.) Highway Comm. (1 year). TT 4.5: P 4.5: RC 4.5: D 1.5.—1920 to 1922 member of firm, Webster & Kerby, engineering and contracting for highway construction in Arizona. TT 1.5: P 1.5: RC 1.5: D 0.5.—1922 to 1924 Engr., Graham County (Ariz.) Highway Comm., in conjunction (after 1923) with Dist. Engr., for Arizona State Highway Dept. TT 2: P 2: RC 2: D 0.5.—1924 to 1925 Engr., Arizona State Land & Water Dept. TT 1: P 1: RC 1: D 0.5.—1925 to 1929 Dist. Engr., and 1929 to date Office Engr., Arizona State Highway Dept. TT 5: P 5: RC 5.—TT 24: SP 2: P 22: RC 17: D 4. Refers to J. S. Barlow, J. W. Barnett, J. W. B. Blackman, F. R. Goodman, E. L. Griggs, W. W. Lane, G. L. McLane, C. G. Morrison, C. C. Small, C. M. Strahan.

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(9) JACKSON, JAMES WILLIAM, 325 West Sixth Ave., Gary, Ind. (Age 25. Born Portsmouth, Va.) 1927 B. S. in Civ. Eng., Va. Pol. Inst. TT 4: P 4.—July 1927 to date Structural Detailer and Checker, American Bridge Co., Gary (Ind.) plant. TT 2.7: P 2.7: D 0.2.—TT 6.7: P 6.7: D 0.2. Refers to R. B. H. Begg, F. W. Dencer, A. P. Ludberg, S. M. Smith, C. E. Webb.

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(9) JEUP, BERNARD HENRY, 930 K. of P. Bldg., Indianapolis, Ind. (Age 30. Born Indianapolis, Ind.) 1922 B. S. in Chem. Eng., Purdue Univ. TT 4: P 4.—Sept. 1922 to Sept. 1924, Jan. to March 1925 and Oct. 1925 to March 1926 Senior Chemist and Asst. San. Engr., and March to Oct. 1925 Acting Director, Water and Sewage Dept., Indiana State Board of Health, Indianapolis. TT 3.8: P 3.8: RC 0.6.—Sept. 1924 to Jan. 1925 student, Harvard Univ.—March 1926 to March 1927 with U. S. Public Health Service, Div. of Stream Pollution, Cincinnati, Ohio, on experimental work, water filtration. TT 1: P 1.—Sept. 1927 to date Asst. Field Engr. and San. and Testing Engr., Jeup & Moore, Cons. Engrs., Indianapolis, Ind. TT 2.1: SP 0.5: P 1.6: RC 0.5.—TT 10.4: SP 0.5: P 9.9: RC 1.1. Refers to C. Grossman, J. W. Moore, R. B. Moore, H. S. Morse, H. W. Streeter.

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(5) KAUFHOLZ, FERDINAND, Jr., 1114 Patterson Park Ave., Baltimore, Md. (Age 23. Born Baltimore, Md.) 1929 B. E., The Johns Hopkins Univ. TT 4: P 4.—Sept. 1928 to Feb. 1929 Asst. Civ. Engr., Davison Chemical Co., Baltimore, Md., on inspection and direction of construction, computing and estimating costs.—March 1929 to date Jun. Civ. Engr., U. S. Public Bldgs. and Public Parks, inspecting buildings, designing and estimating steel and concrete. TT 1: P 1.—TT 5: P 5. Refers to J. L. Nagle, C. A. Peters, Jr., J. B. Rasbach, A. J. Warlow.

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(3) KEPNER, HAROLD RAYMOND, 2179 Fourteenth St., Troy, N. Y. (Age 34. Born Mt. Hope, Ohio.) 1917 A. B., Ohio Wesleyan Univ. 1920 S. B., and 1925 S. M. Mass. Inst. Tech. TT 4: P 4.—June to Sept. 1920 Asst. Engr., San. Dist. of Chicago, drafting and checking design of parts of Calumet sewage-treatment plant. TT 0.8: P 0.8.—Sept. 1920 to Feb. 1922 Asst. San. Engr., State Dept. of Public Health, Illinois, investigation and reports on water supplies, sewage-disposal plants, etc. TT 1.4: P 1.4: RC 0.5.—Feb. 1922 to April 1923 and June to Oct. 1924 Asst. Engr., Water Supply Board, Providence, R. I., on investigation and design of structures and design of part of aqueduct. TT 1.4: P 1.4: RC 0.8.—April to Oct. 1923 Asst. Engr. with Gannett, Seelye & Fleming, Harrisburg, Pa., on design, construction and valuation of water-works, etc. TT 0.5: P 0.5: RC 0.4: D 0.1.—Oct. 1923 to June 1924 Asst. Instructor, Dept. of Civ. Eng., and Oct. 1924 to June 1925 Instructor in water-power engineering, Massachusetts Inst. of Technology. TT 1.4: P 1.4.—June to Sept. 1928 San. Engr., Connecticut Dept. of Health, on sanitary survey of Connecticut River watershed. TT 0.3: P 0.3: RC 0.3.—Sept. 1925 to June 1928 and Sept. 1928 to date Instructor in civil engineering, Rensselaer Polytechnic Inst. TT 3.8: P 3.8: RC 0.2.—TT 12.6: P 12.6: RC 2.2: D 0.1. Refers to H. K. Barrows, L. Pearse, P. C. Ricketts, C. M. Spofford, C. H. Sutherland, R. G. Tyler, F. E. Winsor.

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(13) KERR, CLARENCE MARION, 284 East William St., San Jose, Cal. (Age 29. Born Aurora, Nebr.) 1927 B. S. in C. E., Univ. of Nebr. TT 4: P 4.—Jan. to June 1922 Draftsman, Concrete Eng. Co., Omaha, Nebr. TT 0.2: SP 0.2.—Sept. 1925 to June 1926 Draftsman, Southern Pacific R. R. Co., San Francisco, Cal. TT 0.4: SP 0.4.—June 1926 to March 1928 with Santa Fe R. R., San Francisco, Cal., until Jan. 1927 as Draftsman, then Transitman, and after March 1927 Designer. TT 1.3: SP 0.4: P 0.9: D 0.9.—March 1928 to date Dist. Supt. of Constr., Granite Constr. Co., San Jose, Cal. TT 2: P 2: RC 2.—TT 8: SP 1: P 7: RC 2.1: D 0.9. Refers to M. H. Antonacci, S. A. Chapman, M. I. Evinger, C. B. Goodwin, C. E. Mickey.

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(8) KINGSTON, SAMUEL PAUL, 7455 Greenview Ave., Chicago, Ill. (Age 23. Born Hastings, Minn.) 1929 B. C. E., Univ. of Minn. TT 4: P 4.—June 1929 to date Draftsman, until Aug. 1929 with Chicago, Milwaukee, St. Paul & Pacific R. R., then with Atchison, Topeka & Santa Fe Ry. TT 0.4: SP 0.4.—TT 4.4: SP 0.4: P 4. Refers to F. Bass, A. S. Cutler, R. A. Van Ness.

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(1) **KIRKHAM, HENRY PARSONS**, 610 Sixth St., Brooklyn, N. Y. (Age 42. Born Brooklyn, N. Y.) 1909 C. E., Brooklyn Pol. Inst. TT 4: P 4.—Sept. 1909 to June 1910 Instructor, Brooklyn Polytechnic Inst. TT 0.7: P 0.7.—July 1910 to June 1911 with A. W. Buel, Cons. Engr., Jersey City, N. J., checking shop plans, drafting and layout work, railroad structures, Western Maryland R. R. TT 0.9: P 0.9.—Jan. to June 1913 with Weiskop & Burroughs, New York City, design drawings and checking on office buildings. TT 0.5: P 0.5: D 0.5.—June to Aug. 1913 with Bridge & Bldg. Dept., Erie R. R., checking shop plans, designing structures. TT 0.2: P 0.2.—Aug. 1913 to July 1916 with New York Municipal Ry. Corporation (B. M. T.), on design drawings, designing elevated railroad structures, checking shop drawings. TT 3: P 3: D 2.—July 1916 to May 1919 with U. S. Army, Texas, Plattsburgh, and A. E. F.; finally as 1st Lieut., Field Artillery. TT 1.4: SP 1.4.—June 1911 to Dec. 1912 and July 1919 to date with Constr. Dept., Brooklyn Union Gas Co., as Inspector and Estimator, and (since July 1919) in charge of drafting and design of buildings, foundations, docks, piers, pumping stations, specifications, etc. TT 12.2: P 12.2: RC 8: D 10.7.—TT 23: SP 1.4: P 21.6: RC 8: D 14.7. Refers to C. W. Hudson, W. W. Kunze, J. C. Meem, E. J. Squire, C. W. Staniford, L. S. Stiles.

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(1) **LANGFORD, LEONARD LIONEL**, 250 East Two Hundred Thirty-Seventh St., New York City. (Age 30. Born Glasgow, Scotland.) Nov. 1919 to date with Pacific Flush-Tank Co., until Oct. 1922 as Shopman and Draftsman, Chicago office, testing and experimental work on sewage equipment and apparatus, design, sales and supervision of installation of equipment for sewage-treatment plants, including pumps, ejectors, electrical control, etc., and since Oct. 1922 Engr., New York City office, designing and supervising installation of equipment for sewage-treatment plants, sales office and drafting room routine, also some design. TT 9: SP 1.8: P 7.7: RC 2.1: D 3.1. Refers to C. L. Bogert, St. J. Clarke, H. B. Cleveland, S. G. Hess, C. E. Kauffmann, G. W. Knight, G. L. Robinson, F. K. Wing.

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(7) **LANGLEY, GEORGE WASHINGTON, Jr.**, 1225 South Nineteenth St., Sheboygan, Wis. (Age 45. Born Merrill, Wis.) 1904 to 1910 Rodman, etc., to Supt., with Langley & Alderson, on logging and railroad construction. TT 4: SP 2: P 2: RC 2.—1910 to 1911 Supt., R. R. Dept., Atwood Lumber & Mfg. Co., Park Falls, Wis., in complete charge of logging railroad (over 150 miles), responsible for surveys and plans and supervised construction and operation. TT 1.3: P 1.3: RC 1.3.—1911 to 1917 (except 1 year) Contr., constructing railroads, highways and dams, being Supt., Mgr., and on estimates; supervised earthwork for large storage dam on Tomahawk River at Bradley, Wis., etc. for Langley & Brooks, Contrs., later as member of firm, on construction of 3 miles of Fairchild & Northwestern R. R., Eau Claire County, Wis.; remainder of time Contr., on highway work in Lincoln County, Wis., etc., also general civil engineering, including surveys and plans for logging railroad (3½ miles) for Heinemann Lumber Co. of Merrill, Wis. TT 5: P 5: RC 5.—1917 to 1918 with Engr. Corps, U. S. Army, assigned to Engr. of Constr., Transportation Corps, S. O. S., A. E. F., on surveys for railroad yards, transfer points, etc. TT 2: P 2.—May 1919 to Jan. 1920 Res. Engr., Wisconsin Highway Comm. TT 0.7: P 0.7.—Jan. 1920 to date County Highway Engr., Sheboygan County Highway Dept., until 1928 made surveys and plans for and constructed about 25 miles of road each year (over \$250 000 each season) also supervised plans and construction of 2 to 4 concrete deck girder bridges (spans 25 to 75 ft., some 3-span bridges) and 8 to 12 smaller concrete bridges each season; since 1928 supervising construction of concrete highways (over \$1 500 000). TT 10: P 10: RC 10: D 10.—TT 23: SP 2: P 21: RC 18.3: D 10. Refers to J. T. Donaghey, J. Donohue, A. L. Hambrecht, H. J. Kuelling, O. C. Rollman, H. Y. Smith, K. H. Talbot.

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(10) **LEVIE, WILLIAM ANTHONY**, Birmingham, Ala. (Age 32. Born Goodwater, Ala.) Sept. 1918 to June 1919 Student in Civ. Eng., Alabama Polytechnic Inst. TT 0.5: P 0.5.—Aug. 1916 to Feb. 1917 Rodman, Coosa County, Ala., surveys, highway location and construction. TT 0.2: SP 0.2.—Feb. to Oct. 1917 Rodman and Asst. Instrumentman with Kenan & Pace, Engrs., Goodwater, Ala. TT 0.4: SP 0.4.—Oct. 1917 to March 1918 Rodman, Alabama Power Co., Birmingham, Ala. TT 0.2: SP 0.2.—March to Sept. 1918 Instrumentman and Inspector, with Constr. Q. M., U. S. Army, sewer location and construction. TT 0.2: P 0.2.—April to Dec. 1926 Asst. Engr., Roanoke River Power Co., Clarksville, Va., on topographic surveys, river soundings, borings, etc., for hydro-electric power development. TT 0.7: P 0.7: RC 0.7.—June to Nov. 1929 Dist. Engr., Phoenix Utility Co., Hot Springs, Ark., on surveys and construction for hydro-electric development. TT 0.5: P 0.5: RC 0.5.—June 1919 to April 1926, Dec. 1926 to June 1929 and Nov. 1929 to date with Dixie

Constr. Co., Birmingham, Ala., as Instrumentman in charge of field party (5 years), Chf. of Party (1½ years), Res. Engr. (2 years), Div. Engr. (2½ years), and Field Engr. in charge (about 3 years) on transmission and land lines, river surveys, topography, transit, planetable and Fiske method of air plane pictures, construction for hydro- and steam-power development, highway, railroads, bridges, etc. TT 9.7: P 9.7: RC 7.3: D 2.4.—TT 12.5: SP 1.1: P 11.4: RC 8.5: D 2.4. Refers to F. E. Hale, M. S. Long, A. C. Polk, L. T. Shook, O. G. Thurlow, L. G. Warren, W. S. Winn.

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(5) MANGAN, JOHN WILLIAM, 1835 K St. N. W., Washington, D. C. (Age 32. Born Middletown, N. Y.) 1921 B. S. in C. E., Univ. of Mich. TT 4: P 4.—March 1922 to Sept. 1923 Jun. (Valuation) Engr., Bureau of Valuation, Interstate Commerce Comm., Washington, D. C., on computations, etc. TT 1.6: P 1.6.—Sept. 1923 to date with U. S. Geological Survey, as follows: Sept. 1923 to March 1926 Jun. Hydr. Engr., on collection of stream-flow data, water-resource investigations and partly responsible for field work in Colorado and Wyoming, and (after Oct. 1924) Utah, Nevada and Idaho; April 1926—Nov. 1927 Jun. Hydr. Engr., and Dec. 1927—Sept. 1928 Asst Hydr. Engr., Sec. of Reports, Washington, D. C., review and examination of manuscript of reports of annual publications of U. S. Geological Survey; Oct. 1928—June 1929 Asst Hydr. Engr., and since July 1929 Associate Hydr. Engr., on water-resource investigations and stream-flow studies. TT 6.5: P 6.5: RC 1.5.—TT 12.1: P 12.1: RC 1.5. Refers to R. Follansbee, N. C. Grover, A. H. Horton, J. C. Hoyt, A. B. Purton.

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(4) MILLARD, LEWIS CLYDE, Municipal Bldg., Upper Darby, Pa. (Age 38. Born Philadelphia, Pa.) 1918 to 1920 (3 semesters) student, Temple Univ. School of Architecture. Also completed course in surveying.—1910—1914 and 1921 Asst. Constr. Supt. with Ballinger & Perrot, Archts. and Engrs., Philadelphia, on construction of Villa Maria Acad., Frazer, Pa., and (1921) Hardwick & McGee Bldg., Philadelphia, Pa. TT 2.8: SP 2: P 0.8.—1917—1918 with U. S. Army.—1922—1924 Secy. and Treas., Pennsylvania Varnish Co., Inc., Philadelphia, architectural work and minor engineering. TT 3: P 3.—1925 to date Chf. Bldg. Inspector, Upper Darby Township, Pa., checks structural designs and supervises Inspectors; has supervised erection of \$50 000 000 worth of construction. TT 5.2: P 5.2: RC 5.2.—TT 11: SP 2: P 9: RC 5.2. Refers to F. W. Abbott, D. W. Anders, J. Cantley, A. F. Damon, Jr., W. H. Gravell, J. P. H. Hallahan, E. G. Perrot, E. E. Seyfert.

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(9) MITER, HARRY FANCHER, 16111 Fernway Rd., Cleveland, Ohio. (Age 52. Born Troy, N. Y.) 1899 C. E., Rens. Pol. Inst. TT 4: P 4.—1899 to 1900 Rodman and Instrumentman, Chicago & Northwestern R. R. TT 0.5: SP 0.5.—1900 to 1901 on track work, Pennsylvania R. R. Co. TT 0.2: SP 0.2.—1901 to 1917 with King Bridge Co., Cleveland, Ohio, 5 years in Estimating and Designing Dept., and 11 years in responsible charge of estimates and design, including structural steelwork for railroad and highway bridges, viaducts, factory and office buildings, also sales and supervision of fabricating shop. TT 16: P 16: RC 11: D 11.—1918 to 1920 with Watson Eng. Co., consulting work, checking and designing structures, including large crane for Navy Dept., etc. TT 2: P 2: RC 2: D 2.—1917 to 1918 and 1920 to date with Austin Co., Cleveland, 6 years in charge of Estimating and Designing Dept., including estimates and designs for factory, railroad and industrial buildings, 5 years Dist. Mgr. in charge of Cleveland Dist., with supervision over Sales, Estimating, Designing, Eng., Constructing and Acct. Depts.; since Jan. 1930 Vice-Pres. in charge of all foreign work, including automobile plant and city to be constructed at Nijni, U. S. S. R. TT 11: P 11: RC 11: D 11.—TT 33.7: SP 0.7: P 33: RC 24: D 24. Refers to W. P. Brown, W. Dyer, J. W. Frazier, F. L. Gorman, B. R. Leffler, K. H. Osborn, W. J. Watson.

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(15) MOORE, WILLIAM LEE, 2224 Vance Ave., Alexandria, La. (Age 34. Born Maryville, Tenn.) Jan. to Oct. 1913 Rodman and Chainman with City Engr., Park City, Tenn. TT 0.4: SP 0.4.—Oct. 1913 to Feb. 1914 Rodman and Chainman with Cy Seahorn, Civ. Engr., and (part of time) with W. A. Seymore, Knoxville, Tenn. TT 0.2: SP 0.2.—March to Oct. 1917 Levelman and Transitman, Tennessee Valley Iron and R. R. Co., on railroad location and contour and topographic survey of Town of Collinswood. TT 0.3: SP 0.3.—Oct. 1917 to April 1918 Asst. Field Engr., Aluminum Co. of America, on sanitary sewers, topography and stream measurements. TT 0.3: SP 0.3.—April 1918 (2 weeks) Field Engr., U. S. Coal & Coke Co., Lynch, Ky.—April to May 1918 Levelman, Interstate Commerce Commission.—June to Sept. 1918 Field Engr., Westinghouse-Church-Kerr & Co., Air Nitrate No. 2, Muscle Shoals, on plant construction. TT 0.3: P 0.3.—Sept. 1918 to Jan. 1919 with U. S. Army, Camp Wadsworth, S. C.—April—Nov. 1919 Instrumentman, and Dec. 1919 to June 1921 Jun. Engr. on location and construction, Tennessee Highway Dept. TT 0.7: P 0.7.—June

1921 to Jan. 1923 Res. Engr. with C. H. Olmstead, Nashville, Tenn. on construction of highways, penetration type, concrete and concrete base and asphalt surfaces, including a 643-ft. river bridge. $TT\ 6.5: P\ 6.5: RC\ 6.5$.—Jan. 1923 to date Drainage Engr. and Salesman, The Louisiana-Corrugated Culvert Co., on sales and promotional designing for using Armco Ingots iron products. $TT\ 2.2: P\ 2.2: RC\ 2.2: D\ 2.2$.— $TT\ 12.5: SP\ 1.2: P\ 11.3: RC\ 10.3$: $D\ 2.2$. Refers to J. C. Akers, R. H. Baker, C. N. Bass, H. A. Burr, J. E. Moreland, C. H. Olmstead, E. B. Wilkinson.

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(1) MUHLHEIM, ARMIN, 568 Audubon Ave., New York City. (Age 32. Born Treiten, Canton Bern, Switzerland.) 1922 C. E., Tech. Univ., Zurich, Switzerland. $TT\ 4: P\ 4$.—Jan. to Sept. 1917 with Gesellschaft der L. v. Rollschien Eisenwerke, Bern, Switzerland, in machine shop, on construction of elevator brakes, construction and erection of structural frames for cranes, cogwheel railway cars, etc. $TT\ 0.3: SP\ 0.3$.—June to Dec. 1923 Civ. Engr. with Zehntner & Brenneisen, Cons. Engrs., Zurich, Switzerland, on reinforced concrete, design, drafting, computations and (1 month) surveying. $TT\ 0.5: P\ 0.5: D\ 0.5$.—April 1924 to April 1925 Draftsman and Designer, Republic Fire Proofing Co., on design, layout and checking of reinforced hollow-tile floor and roof construction for high schools in Asbury Park and Orange, N. J., and Roxbury and East Boston, Mass., etc. $TT\ 1: P\ 1: RC\ 0.3: D\ 1$.—May to Aug. 1925 Asst. to C. A. Janni, Cons. Engr., New York City, designing and drafting on Beck Memorial Bridge, Lynchburg, Va., transforming from wrought-iron to reinforced concrete. $TT\ 0.3: P\ 0.3: RC\ 0.3: D\ 0.3$.—Sept. 1925 to date Concrete Designer and Checker, Hydr. Dept., Elec. Bond & Share Co., on investigations and design of power developments, steam and hydro-electric stations; designed and detailed intake and discharge chamber, turbine-room foundation and sub-basement, masonry and reinforcement of layout for a boiler-room and turbine-room basement, also on switch-yard, power-house dam design, etc. (detailed statement forwarded with application). $TT\ 4.6: P\ 4.6: RC\ 0.9: D\ 4.6$.— $TT\ 10.7: SP\ 0.8: P\ 10.4: RC\ 1.5: D\ 6.4$. Refers to W. E. Brown, P. L. Hornby, A. C. Janni, H. Miller, F. J. Nebeker, H. H. Steinhauser.

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(12) NEWELL, HIRAM EDGAR, 500 Going St., Portland, Ore. (Age 46. Born Beatrice, Nebr.) 1910 B. S., Univ. of Nebr. $TT\ 4: P\ 4$.—June to Oct. 1910 with Marshalltown (Iowa) Bridge & Iron Works, detailing and checking shipments. $TT\ 0.2: SP\ 0.2$.—Nov. 1910 to Feb. 1911 timekeeping and Material Clerk, C. C. Graff Co., Seattle, Wash., and steel placing on building construction, Hurley Mason Co., Gen. Contrs., Tacoma, Wash., and Portland, Ore., and March 1911 to April 1913 timekeeping on railroad bridge work, and Asst. Carpenter Foreman and Foreman on concrete building construction, Hurley Mason Co., Portland, Ore. $TT\ 1.8: SP\ 0.6: P\ 1.2: RC\ 0.5$.—May 1913 to Aug. 1914 with Oregon State Highway Dept., as Engr. in charge and on supervision of bridge construction (under Bridge Engr.). $TT\ 1.3: P\ 1.3: RC\ 1$.—Sept. 1914 to July 1916 Supt., Roadmaster's Dept., Multnomah County, Ore., in charge of bridge construction. $TT\ 1.9: P\ 1.9: RC\ 0.9$.—Aug. 1916 to March 1917 Engr. in charge of layout of Supple, Ballin & Lockwood Ship Yards, Portland. $TT\ 0.7: P\ 0.7$.—April to Nov. 1917 Engr., Oregon Elec. Ry., Bridge Dept., in charge of reconstruction of Wilsonville Trestle. $TT\ 0.7: P\ 0.7: RC\ 0.7$.—Dec. 1917 to Sept. 1920 with Warren Spruce Corporation and Warren Constr. Co., in charge of bridge, highway and general construction, estimating. $TT\ 2.8: P\ 2.8: RC\ 1: D\ 1$.—Oct. 1920 to Oct. 1926 with United Contr. Co. (successor to Warren Constr. Co.), Portland, on design and supervision, estimating, building, highway, crushing plants, sewers, paving, etc. $TT\ 6.1: P\ 6.1: RC\ 3: D\ 2$.—Nov. 1926 to date Sales Engr., Armco products, drainage, irrigation and water-works supplies, until Feb. 1928 with Beall Pipe & Tank Corporation, then with Pure Iron Culverts & Mfg. Co., Portland. $TT\ 3.4: P\ 3.4: RC\ 2: D\ 1.3$.— $TT\ 23: SP\ 0.9: P\ 22.1: RC\ 9.1: D\ 4.3$. Refers to L. P. Campbell, J. A. Elliott, L. Griswold, R. D. Hoyt, C. B. McCullough, K. A. Sinclair, C. F. Thomas.

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(14) OSBORN, VERNON FRANCIS, 541 South Eighteenth St., Lincoln, Nebr. (Age 25. Born McCook, Nebr.) 1930 B. S. C. E., Univ. of Nebr. $TT\ 4: P\ 4$.—June 1925 to date (2 years vacations and while student, and 15 months full time) with Nebraska State Highway Dept., as Rodman, Draftsman, Instrumentman, in charge of construction projects, and since June 1929 Jun. Project Engr. $TT\ 1.2: SP\ 0.1: P\ 1.1: RC\ 0.9$.— $TT\ 5.2: SP\ 0.1: P\ 1.1: RC\ 0.9$. Refers to C. M. Duff, M. I. Evinger, H. J. Kesner, C. E. Mickey.

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(14) OWENS, CLAUDE PARISH, 1223 Elmarine, Jefferson City, Mo. (Age 35. Born Everett, Mo.) 1919 B. S. in Eng., Univ. of Mo. $TT\ 4: P\ 4$.—1916 to 1919 (while student) in Road Test Laboratory and with City Engr. and W. B. Cauthorn, C. E., as Laboratory Asst., Instrumentman, and Draftsman on street paving, sewer work and surveys.—Summer

1915 Rodman and Chainman with Chas. E. McCrae, on resurveys in Missouri.—Feb. to Sept. 1917 with C. E. Jacoby Eng. Co., Kansas City, Mo., until April as Rodman and Recorder, then Chf. of Party on surveys, stream measurement and map making. *TT 0.3: SP 0.3*.—June to Aug. 1919 Instrumentman and Draftsman with W. B. Cauthorn, C. E., Columbia, Mo., on road, street and sewer surveys and plans, also levee construction. *TT 0.1: SP 0.1*.—Aug. 1919 to date with Missouri State Highway Dept. as follows: Aug. 1919 to June 1920 Chf. of Party on road location, surveys and plans for Federal Aid projects; June 1920 to Sept. 1921 Chf. Draftsman, main office, in charge of drafting office, designing road plans, specifications and estimates; Sept. 1921 to May 1922 Chf. of Surveys and Plans, in charge of all field survey parties and main office force preparing surveys, plans and estimates; May to Nov. 1922 Div. Engr. No. 2, at Macon, Mo., in charge of road location, surveys and construction in eleven counties in North Central Missouri; Nov. 1922 to July 1926 Engr. of Maintenance, inaugurated and developed Maintenance Bureau, maintaining 7 640 miles of highways (expenditure \$3 400 000 annually); since July 1926 Asst. to Chf. Engr., on same work (expenditure \$4 000 000 annually), light construction and experimental road work. *TT 10.2: SP 0.4: P 9.8: RC 8.5: D 9.8*.—*TT 15.4: SP 1.6: P 13.8: RC 8.5: D 9.8*. Refers to C. W. Brown, H. C. Halley, A. H. Hinkle, C. E. Jacoby, H. H. Lotter, E. J. McCaustland, H. P. Mobberley, B. H. Piepmeyer, R. J. Windrow.

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(13) OWENS, REUBEN HIRST, City Hall, San Francisco, Cal. (Age 32. Born Dublin, Ireland.) 1923 B. A. I. and B. A. Trinity Coll., Dublin, Ireland. *TT 4: P 4*.—April to July 1923 student, London & North Eastern Ry., London, England. *TT 0.1: SP 0.1*.—Sept. to Oct. 1923 Plant Asst., Petroleum Dehydrating Co., Long Beach, Cal. *TT 0.1: SP 0.1*.—Oct. 1923 to March 1924 Draftsman with Allin Bros., Cons. Engrs., Pasadena, Cal., drafting and computing on subdivisions, etc. *TT 0.2: SP 0.2*.—March 1924 to Sept. 1925 Office Engr., Title Guarantee & Trust Co., Los Angeles, Cal., drafting, computing, subdivision design and title investigations. *TT 1.5: P 1.5*.—Sept. 1925 to Nov. 1926 with C. C. Kennedy, Cons. Engr., San Francisco, Cal., as Asst. Res. Engr. at Dunsmuir, Cal., on street improvement, sewer construction, reinforced concrete walls and town survey (\$275 000). *TT 1.3: P 1.3: RC 1*.—Nov. 1926 to date Senior C. E. Draftsman, Bureau of Eng., City and County of San Francisco, made plans, computations and legal descriptions of property for streets, boulevards, etc., design and computation of new street alignment, plotted topography, projected highway locations, made and checked estimates, made investigations, plans and estimates and checked specifications for subdrains and surface grading for correction of landslide (\$15 000), etc. *TT 3.3: P 3.3: RC 1: D 1*.—*TT 10.5: SP 0.4: P 10.1: RC 2: D 1*. Refers to R. E. Campbell, D. Clark, E. A. Ingham, C. C. Kennedy, M. M. O'Shaughnessy, E. N. Prouty, H. J. Stahle, L. G. Tegtmeyer.

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(4) PARLETTE, LEMUEL FREDERICK, 6141 Christian St., Philadelphia, Pa. (Age 49. Born Philadelphia, Pa.) Civ. Eng. course, International Correspondence School.—July 1900 to Sept. 1902 with Bureau of Water, Philadelphia, until July 1901 as Rodman, on construction of Belmont Filter Plant, laying out sewer and water pipe-lines, etc., then Transitman, Acting Head of Party, giving lines and grades for reservoir and filter bed of reinforced concrete. *TT 1.1: SP 1.1*.—Sept. 1902 to date with Philadelphia Rapid Transit Co., Philadelphia, Pa., as follows: Sept. 1902 to Jan. 1904 Transitman, on line and grade for track and special curve work, surveys; Jan. 1904 to Jan. 1906 Draftsman, laying out track and conduit plans, small designs for mechanical parts of switches and frogs, also tool tracings; Jan. 1906 to Jan. 1912 Senior Draftsman, on calculation and design of bridges, reinforced concrete, masonry and timber structures, estimates and calculations for cut and fill and design and computation of special track layouts; Jan. 1912 to Jan. 1915 Checker, checking and recalculating special track layouts, and responsible for checking of structural and bridge plans; Jan. 1915 to Jan. 1920 Asst. Chf. Draftsman, Way Dept., and after June 1918 also Valuation Engr., designed and responsible for construction of car-house trackwork, track extensions and bridge design, also designed Hog Island and League Island extensions and terminals; also responsible for preparation of valuation record of way and structures; Jan. 1920 to March 1923 Chf. Draftsman, responsible for plans and design of way and structure construction, involving bridges, viaducts, masonry and mechanical development of switches and frogs; March 1923 to July 1927 Chf. Draftsman, combined Drawing Room (all engineering activities), responsible for design work of 55 men; since July 1927 Engr. of Design, Eng. Dept., being next in authority to Chf. Engr., responsible for design of all structures, cars, buses, cabs, power and buildings, and for work of 70 engineers and designers, approving and signing all plans. *TT 25.9: SP 1.6: P 24.3: RC 18.3: D 15.5*.—*TT 27: SP 2.7: P 24.3: RC 18.3: D 15.5*. Refers to J. H. M. Andrews, S. Harris, W. R. Scanlin, F. G. Schworm, J. W. Silliman, C. H. Stevens, W. S. Twining.

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(3) PIRRO, ARTHUR GEORGE, 26 Arcadia Ave., Albany, N. Y. (Age 22. Born Mt. Vernon, N. Y.) 1929 C. E., Rens. Pol. Inst. TT 4: P 4.—Aug. 1929 to Jan. 1930 with White Constr. Co., Inc., New York City, handling time and materials and assisting in field engineering. TT 0.3: SP 0.1: P 0.2.—TT 4.3: SP 0.1: P 4.2. Refers to E. R. Cary, L. W. Clark, T. R. Lawson, W. W. Rousseau.

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(11) POPE, HAROLD FRANK, 512 South Glendale Ave., Glendale, Cal. (Age 27. Born Denver, Colo.) 1924 B. S. in Civ. Eng., Cal. Inst. Tech. TT 4: P 4.—July 1924 to Feb. 1925 with California Highway Comm., as Draftsman on plans, Chainman and Transitman and assisting Res. Engrs. with reports. TT 0.3: SP 0.3.—Feb. 1925 to date with Los Angeles County Road Dept., until June 1926 as Jun. C. E. Draftsman, Maintenance Div., plotted notes, laid grades and inspected construction of curbs sidewalks and gutters, then Sr. C. E. Draftsman, Bridge Div., acting as Res. Engr. in responsible charge, as Asst. to Bridge Engr. in charge of construction of wooden and concrete bridges, viaducts, grade separations and steel and brick buildings, also (1 1/4 years) drafting and designing; TT 4.4: SP 0.6: P 3.8: RC 2.6: D 1.—TT 8.7: SP 0.9: P 7.8: RC 2.6: D 1. Refers to W. D. Armstrong, W. H. Baker, Jr., E. A. Burt, O. F. Cooley, R. R. Martel, W. W. Patch, F. Thomas.

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(1) PURCELL, WILLIAM STANLEY, 1678 First Ave., New York City. (Age 25. Born Brooklyn, N. Y.) July 1924 to Aug. 1925 Draftsman and Engr., New York & Queens Elec. Light & Power Co., Flushing, N. Y., drafting, street lighting and transmission lines, supervising tracers and junior draftsmen. TT 0.5: SP 0.5.—Aug. 1925 to March 1927 Asst. Engr. and Draftsman, New Jersey State Highway Dept., Newark, N. J., drafting, computing, surveying, highway design (under Res. Engr.), property acquisition research. TT 1.4: SP 0.1: P 1.3: D 0.5.—March 1927 to Jan. 1929 Office Engr., Public Service Elec. & Gas Co., Newark, acting as Asst. Office Mgr., in charge of draftsmen and clerks in Real Estate Dept., purchase of transmission-line, right-of-way, title search, etc. TT 1.8: P 1.8: RC 1.8.—Jan. 1929 to date Jun. Engr., Trojan Eng. Corporation, New York City, computing, drafting, hydro-electric investigation, power studies, research. TT 1.1: P 1.1.—TT 4.8: SP 0.6: P 4.2: RC 2.3. Refers to O. A. Arnold, R. M. Beck, G. Blaauw, P. A. Shaw, A. Van Siller, F. H. Wolf.

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(9) REED, FLOYD LEVAN, 224 Ardmore Drive, Middletown, Ohio. (Age 35. Born in Paulding County, Ohio.) 1925 B. C. E., Ohio State Univ. TT 4: P 4.—June 1914 to May 1915 Foreman with E. H. Gorman, Contr., Paulding, Ohio, on construction of houses, barns and farm buildings. TT 0.5: SP 0.5.—July 1915 to June 1916 Inspector, Ohio State Highway Dept., in charge of bituminous macadam road construction in Paulding County, Ohio, including laying out structures, giving of grade and line for pavement, inspecting materials, etc. TT 1: P 1: RC 1.—April to May 1917 Materialman, American Telephone & Telegraph Co., Chicago, Ill. TT 0.1: SP 0.1.—June 1917 to Aug. 1919 Officer, U. S. Army, being Battalion Intelligence Officer overseas, also on construction; 6 months Commanding Officer and finally 1st Lieut., Infantry; at present Capt., Engr. Reserve. TT 2: P 2: RC 2.—Dec. 1919 to Jan. 1921 Asst. Supt., Columbia Sugar Co., on construction of sugar-refining plant (mostly reinforced concrete, \$1 500 000); had charge of inspection of materials and work. TT 1: P 1: RC 1.—Feb. to Aug. 1921 Gen. Foreman, Farmers' Sugar Co., on construction of sugar refinery, in general charge (under Asst. Supt.). TT 0.5: P 0.5: RC 0.5.—Summer 1923 Asst. Res. Engr., Ohio State Highway Dept., in charge of bituminous macadam road (7 miles).—Sept. 1923 to May 1925 (while student) Draftsman and Asst. to City Planning Engr., Columbus, Ohio.—June to July 1925 with Butler, Barnett & Taylor Co., as Designing Engr. on subdivisions. TT 0.2: P 0.2: RC 0.2: D 0.2.—Aug. 1925 to June 1926 Gen. Contr., road, street and some building construction, also boardwalks. TT 0.9: P 0.9: RC 0.9: D 0.9.—Feb. 1927 to date Asst. Div. Engr., Ohio State Highway Dept., supervising in Div. office and Res. Engr. offices in five counties, having charge of maintenance and construction, including laying out and supervising design of structure (under 20-ft. span), design of roads, general charge of construction projects, requisitioning material, etc. TT 3: P 3: RC 3: D 3.—TT 13.2: SP 0.6: P 12.6: RC 9.4: D 4.1. Refers to E. F. Coddington, F. H. Eno, J. M. Montz, C. T. Morris, C. W. Pfeiffer, J. C. Prior, C. E. Sherman, R. C. Sloane, R. H. Smith.

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(13) REEVE, READ DRIVER, Care, Pacific Gas & Elec. Co., Martell, Cal. (Age 37. Born Ogden, Utah.) July 1914 to Jan. 1915 Rodman, Utah Constr. Co., Ogden, Utah, on survey and map work. TT 0.3: SP 0.3.—Feb. to June 1915 Rodman with A. F. Parker, Cons.

Engr., Ogden, on survey work. *TT 0.2: SP 0.2*.—July 1915 to June 1918 with Nevada Northern Ry. Co., East Ely, Nev., as Rodman, Computer, Levelman, Asst. to Engr. on construction, maintenance and federal valuation office work. *TT 2: SP 1: P 1*.—July 1918 to July 1919 with U. S. Army, A. E. F.—Sept. 1919 to Dec. 1920 Chf. of Party, Utah Water Storage Association, Salt Lake City, Utah, in charge of survey party, preliminary survey on dam sites, canal locations and office work. *TT 1.3: P 1.3*.—Jan. to Aug. 1921 Material Clerk, Shattuck Constr. Co., North Salt Lake, Utah, on construction of irrigation system for Bonniville Irrigation Dist. *TT 0.4: SP 0.4*.—Sept. 1921 to date with Pacific Gas & Elec. Co., until May 1923 as Transitman in charge of field layout for construction of substation and housing Voca-Dixon substation, Vacaville, Cal., then Asst. Engr. on construction of dam and tunnel, Pit River Power Development No. 3, and after May 1926 Res. Constr. Engr. on construction of Pit River Power Development Dam No. 4 and Mokelumne River Power Development, including salt springs rockfill dam, tunnels, conduit, regulator dams and power house. *TT 7.9: SP 0.3: P 7.6: RC 3.8*.—*TT 12.1: SP 2.2: P 9.9: RC 3.8*. Refers to W. Dreyer, G. C. Green, E. H. Hatch, A. H. Markwart, O. W. Peterson, I. C. Steele.

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(1) **REILLY, THOMAS GEORGE**, 275 Bloomfield Ave., Caldwell, N. J. (Age 42. Born Philadelphia, Pa.) 1907 to 1909 Rodman and Chainman, Fidelity Development Co., Morris Park, N. Y., laying out streets, lines and grades for sewers, curbs, sidewalk, grading and paving. *TT 1.5: SP 0.5: P 1*.—1909 to 1910 Transitman and later Asst. Engr., New Jersey Imperial Road Co., New York City, gave lines and grades and supervised construction of Imperial pavement on Californian asphalt road. *TT 1: P 1*.—1910 to 1917 Constr. Supt., Eng. Dept., Public Service Elec. Co., Newark, N. J., in responsible charge of underground conduit construction; gave lines and grades and supervised construction. *TT 7: P 7: RC 7*.—1917 to 1919 with U. S. Army in U. S. and France, instructed Infantry in construction of trenches, dugouts, etc.—1919 to 1922 Assessor and Asst. Surveyor, Map Dept., Assessment Bureau, Jersey City, N. J., surveying and plotting. *TT 2: P 2: RC 2*.—1922 to 1923 Surveyor, Title Mortgage and Guaranty Co., Monticello, N. Y., on land surveying and mapping. *TT 1: P 1: RC 1*.—1923 to 1926 Asst. Engr., Eng. Dept., Essex County, Newark, N. J., in charge of construction of roads, bridges, sewerage and drainage. *TT 3: P 3: RC 3*.—1926 to date member of firm, Thomas G. Reilly & Frederic A. Reimer, Inc., Caldwell, N. J., general municipal engineering and land surveying, including design and construction of highways, sewers, drainage, school playgrounds, land development, water-supply systems, plans, reports, specifications and estimates; in charge of and responsible for all work in connection with offices in Caldwell, N. J. and New York City, including the survey, design and construction of sanitary sewer and water main extensions, survey and reports for sanitary sewerage and disposal and the design and construction of highway projects for the Boroughs of West Caldwell and Roseland, N. J. *TT 4: P 4: RC 4: D 4*.—*TT 19.5: SP 0.5: P 19: RC 17: D 4*. Refers to H. A. Kelly, F. J. Radigan, F. A. Reimer, W. A. Stickel, T. J. Wasser.

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(6) **REMP, RICHARD WILLIAM**, Care, Dravo Contr. Co., Pittsburgh, Pa. (Age 47. Born Dresbach, Minn.) June 1906 to June 1910 with Northern Pacific Ry. Co., as Inspector of dredging, Instrumentman, Transitman and Asst. Engr. in charge of bridge and dock foundations. *TT 2: SP 2*.—June 1910 to Jan. 1912 Asst. Engr., Pacific Eng. Co., Seattle-Portland, Ore., in charge of construction of railroad bridges. *TT 1.6: P 1.6: RC 1.6*.—Jan. to Aug. 1912 Supt., W. N. Concannon, San Francisco, Cal., in charge of building Albina Terminal, Portland, for Southern Pacific Ry. *TT 0.6: P 0.6: RC 0.6*.—Aug. 1912 to Aug. 1913 Engr., Mathison & Anderson, Portland, designing and supervising erection of apartment houses and stores. *TT 1: P 1: D 0.5*.—Aug. 1913 to Aug. 1914 Vice-Pres. and Engr., Fisher Eng. Corporation, Portland, general contract work. *TT 1: P 1: D 0.5*.—Aug. 1914 to Jan. 1915 Bridge Engr., and Jan. 1915 to Dec. 1916 County Engr., Clallam County, Wash., in charge of engineering and design. *TT 0.4: P 0.4: RC 0.4*.—Dec. 1916 to date Supt. of Constr. and Erection, Dravo Contr. Co., Pittsburgh, Pa., as follows: Dec. 1916 to Jan. 1919 in charge of construction of retaining walls, blast-furnace foundations, intakes, soaking pits, open hearth furnaces, pipe lines, water-treating plant and tunnel for Republic Iron & Steel Co., Youngstown, Ohio; Jan. 1919 to Feb. 1920 in charge of Company's boat-yards and field erection; Feb. to Aug. 1920 rebuilt (under operation) black powder plant for Dupont Powder Co., Fairchance, Pa., and plant of Central Railway & Signal Co., Versailles, Pa.; Aug. to Sept. 1920 made technical investigations and surveys of manganese mines, Compton, Va.; Sept. 1920 to June 1921 sunk six open concrete caissons and built piers for hot metal bridge, Trumbull Steel Co., Warren, Ohio; June to Dec. 1921 straightened pneumatic caisson and completed two mine shafts for Maher Collieries Co., Woodland, W. Va.; Dec. 1921 to

April 1922 completed Boulevard of Allies for City of Pittsburgh, Pa.; April to June 1922 designed and built concrete storage dam for Trumbull Steel Co., Warren, Ohio; June to Sept. 1922 built furnace and engine foundations for Reliance Coke & Furnace Co.; Sept. 1922 to July 1923 built small Ohio River terminals for Colonial Steel Co. and Wheeling Steel Corporation, including sinking 3 caissons and concrete piers; arranged for construction of U. S. Emergency Dam, Seattle, Wash.; July 1923 to April 1925 built Pittsburgh Conneaut Dock No. 1 (2400 ft. long), involving sinking 15 caissons and 15 coffer dams; April to Oct. 1925 built 9 piers for two-track Pennsylvania R. R. bridge, Beaver Falls, Pa. (open coffer); Oct. to Dec. 1925 sunk two pneumatic caissons and erected piers for Liberty Bridge; Dec. 1925 to Aug. 1926 sunk caisson (50 by 100) and erected pump house for Jones & Laughlin, Aliquippa, Pa.; Aug. 1926 to Feb. 1927 built river terminals, ice breakers, pump house, moorings for Weirton Steel Co.; Feb. to May 1927 extended boat-yards and river-terminals plant for Company; May 1927 to Feb. 1928 sunk caissons and erected piers for Wabash River Bridge, Terre Haute, Ind.; Feb. 1928 to April 1929 built foundations for Tacony-Palmyra Bridge; since April 1929 sunk 18 pneumatic caissons and built 9 piers for Indianapolis (Ind.) Union Ry. Co. *TT 13.2: P 13.2: RC 13.2—TT 21.7: SP 2: P 19.7: RC 17.7: D. 1.* Refers to G. Boschke, C. E. Chase, A. W. Dann, O. Laurgaard, W. S. McFetridge, F. M. Masters, R. Modjeski.

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(5) **RODGERS, ROE PARKER**, 4553 Thackery Pl., Seattle, Wash. (Age 22. Born Seattle, Wash.) 1929 B. S. in C. E., Univ. of Mich. *TT 4: P 4.*—Jan. 1930 to date Jun. Highway Engr., Div. of Management, U. S. Bureau of Public Roads, time, cost and production data and methods of construction and management of projects. *TT 0.1: SP 0.1.*—*TT 4.1: SP 0.1: P 4.* Refers to I. L. Collier, J. B. Hamilton, C. C. May, J. W. Miller, C. C. More, R. G. Tyler.

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(1) **RUDOLFS, WILLEM**, Short Course Bldg., New Brunswick, N. J. (Age 44. Born Wageningen, Holland.) 1913 L. M., Government Univ., Holland, and 1921 Ph.D., Rutgers Univ. *TT 4: P 4.*—1913 to 1916 Chemist, Experiment Station, Wageningen, Holland. *TT 3: P 3.*—1916 to 1918 Chemist, Univ. of Illinois, Urbana, Ill. *TT 2: P 2.*—1919 Research Fellow, Rutgers Univ., New Brunswick, N. J. *TT 1: P 1.*—1920 Research Fellow, Pasteur Institute, Paris, France. *TT 1: P 1.*—1921 to date Chf., Dept. of Sewage Disposal, New Jersey Agriculture Experiment Station; also 1925 to date Prof., and Head of Depts. of Water Supplies and Sewage Disposal, Rutgers Univ., and 1927 to date in charge of design and operation of water and sewage plants, New Jersey State Institutions. *TT 9: P 9: RC 9.*—*TT 20: P 20: RC 9.* Refers to J. H. Gregory, N. B. Jacobs, H. N. Lendall, L. Pearse, F. H. Snow, G. L. Watson, E. B. Whitman.

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(1) **SAMOILOFF, ALEXANDER ALEXANDER**, 89 Bedford St., New York City. (Age 27. Born Moscow, Russia.) Student, Gen. Eng. course, Cornell Univ. (Oct. 1920 to July 1921) and Civ. Eng. course, Harvard Eng. School (1922 to 1926). *TT 2.5: P 2.5.*—Aug. 1926 to Jan. 1927 surveying and drafting, Lynn (Mass.) Gas & Elec. Co. *TT 0.2: SP 0.2.*—Jan. 1927 to Feb. 1928 Draftsman with Stone & Webster, Boston, Mass. *TT 0.5: SP 0.5.*—Feb. 1928 to Dec. 1929 drafting and designing, until July 1929 on hydraulic water-supply work with Public Works Eng. Corporation, New York City, then on oil terminals with Jackson & Moreland, Boston. *TT 0.9: SP 0.9.*—Dec. 1929 to date with E. A. Graustein, Boston, hydraulic research on theory of soil mechanics. *TT 0.2: P 0.2.*—*TT 4.3: SP 1.6: P 2.7.* Refers to G. M. Fair, E. A. Graustein, A. V. Greaves, L. J. Johnson, H. M. Turner.

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(15) **SCHARFF, DANIEL LAUB**, 1630 Peniston St., New Orleans, La. (Age 32. Born Natchez, Miss.) 1919 B. S. in Civ. Eng., Ga. School Tech. *TT 4: P 4.*—June 1919 to Oct. 1920 Field Engr., Southern Asphalt Association, Atlanta, Ga., promotion of asphalt paving and investigation of proposed paving in South Atlantic States. *TT 0.6: SP 0.6.*—Dec. 1920 to April 1921 Res. Engr., State Highway Dept. of Georgia, on soil roads and reinforced concrete bridges. *TT 0.3: P 0.3: RC 0.3.*—April to Aug. 1921 Paving Inspector, City of Columbia, S. C. *TT 0.1: SP 0.1.*—Aug. 1921 to Sept. 1926 with Froehling & Robertson, Inc., Richmond, Va., until June 1924 as Inspector, inspecting and testing paving and building materials, inspecting paving construction, including asphalt plant inspection and control, then Director of Roads and Pavements and member of firm, in charge of all paving inspection and highway activities, directing field inspectors and design of paving mixes. *TT 4.5: SP 0.5: P 4: RC 2.2.*—Dec. 1926 to date Asst. Engr., City Engr.'s office, New Orleans, La., in charge of paving, sidewalk and drainage construction; at present completing repaving and beautifying city's most important business streets (about \$3 500 000). *TT 3.3: P 3.3: RC 3.3.*—*TT 12.8: SP 1.2: P 11.6: RC 5.8.* Refers to G. L. Bain, P. C. Klyce, F. H. Murray, W. C. Olsen, J. D. Walker, R. Warren.

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(5) SCHWARTZ, MORRIS LOUIS, Hotel Patrick Henry, Roanoke, Va. (Age 33. Born New York City.) 1915 to 1917 student, New York Univ.—June 1916 to Aug. 1918 Inspector and Instrumentman on maintenance and construction, and April 1919 to April 1922 Pilot, on inventory and reporting on physical properties, for Baltimore & Ohio Railroad Co., Baltimore, Md. *TT 3.2: SP 1.2: P 2.*—May 1924 to July 1927 Appraisal Engr., City of Baltimore Comm., on Efficiency and Economy, reporting and appraising municipal properties. *TT 3.3: P 3.3: RC 3.3.*—May 1922 to Feb. 1924 Jun. Engr., reporting on railroad structures, and Oct. 1927 to date Asst. Engr., supervising railroad accounting for physical properties, with Bureau of Valuation, Interstate Commerce Comm., Washington, D. C. *TT 4.3: P 4.3: RC 0.5.*—*TT 10.8: SP 1.2: P 9.6: RC 3.8.* Refers to J. H. Bowditch, E. C. Heron, J. B. Jenkins, M. Kay, J. C. Little, L. R. Lohr, G. F. Wieghardt.

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(1) SHEPARD, HOWARD MATTHEW, Box 303, Ramsey, N. J. (Age 36. Born Nutley, N. J.) Jan. 1911 to Oct. 1912 and Sept. 1919 to Jan. 1920 with F. T. Shepard, C. E., Newark, N. J., as Asst. to Engr. on surveying, paving, sidewalks, sewers, etc., and (after Sept. 1919) Asst. Engr. on design and construction of sanitary sewer system for Town of Belleville, N. J. *TT 1: SP 0.8: P 0.2: RC 0.2: D 0.2.*—Oct. 1912 to May 1913 Chainman on railroad location survey, with L. D. Crear. *TT 0.8: SP 0.8.*—July 1914 to Jan. 1916 with Wm. Gavin Taylor, Newark, as Chf. of Party in charge of field work on Secs. 1 and 2, Passaic Valley trunk sewer, solid-rock tunnel construction, line and grade, estimates, triangulation, etc., and Inspector in charge of sinking Robins Reef shaft. *TT 1.2: SP 0.4: P 0.8.*—May 1913 to July 1914, Jan. 1916 to Sept. 1919 and Jan. 1920 to date with Erie R. R., until July 1914 as Rodman and Acting Transitman in charge of field party, line and grade, surveys, estimates, etc., Jan. 1916 to Aug. 1917 Chf. of Party in charge of final location (16 miles) line, grade cross-sections, surveys, plans, etc., Aug. 1917 to Sept. 1919 Asst. Engr., in charge of surveys, estimates, etc., and (3 months) in charge of field work for construction of bridge over Passaic River at Newark; since Jan. 1920 Asst. Chf. Draftsman in charge of general drafting room, on plans, standards and estimates, right-of-way maps, grade reduction, economics of operation, main-track and terminal coaling stations, ash-handling plants, water supply, classification and terminal yards and facilities, piers, grade-crossing elimination projects (under construction); preparation of grade-crossing elimination plans for approval by New York State Public Service Comm., engineering witness, etc. *TT 14.4: SP 0.6: P 18.8: RC 12.2: D 11.9.*—*TT 16.9: SP 2.1: P 14.8: RC 12.4: D 12.1.* Refers to W. M. Dawley, C. J. Eldridge, F. F. King, A. Levin, J. W. Smith, C. H. Splitstone.

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(5) SHIPP, WALTER EDWARD, 1932 First St. N. W., Washington, D. C. (Age 34. Born Bull Run, Va.) 1925 C. E., Catholic Univ. of America. *TT 4 P 4.*—March to June 1920 student, Columbia School of Drafting, Washington, D. C. June 1922 to Sept. 1924 with James Berral, Civ. Engr., Washington, as Instrumentman and in charge of party, on topographical surveys, location of buildings and cross section work.—July 1925 to Feb. 1928 with George A. Fuller Co., Bldrs., Washington, until March 1926 as Engr. of Constr. on layout and supervision of work on Washington Cathedral (\$15 000 000), then Constr. Engr. in charge of erection and minor design on National Press Club Bldg., Washington (\$3 000 000), and after Sept. 1927 Supt. of Constr., in charge of erection, finance and minor design on Woodward and Lothrop Warehouse (remodeling). *TT 2.7: P 2.7: RC 2: D 0.3.*—March to Sept. 1928 Supt. of reinforced concrete, on plant layout and in charge of erection of Memorial Hospital, Cumberland, Md. (\$500 000) for Baltimore (Md.) Fireproofing Co. *TT 0.5: P 0.5: RC 0.4: D 0.1.* Sept. 1928 to date Constr. Engr., James Baird Co., Bldrs., Washington, in charge of layout, erection, etc., of R. J. Reynolds Office Bldg. (\$1 900 000) and (since March 1929) New Internal Revenue Bldg. (\$6 000 000). *TT 1.6: P 1.6: RC 1.6.*—*TT 8.8: P 8.8: RC 4: D 0.4.* Refers to J. M. Gongwer, T. W. Marshall, N. A. Melick, J. W. Oehmann, A. J. Scullen.

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(7) SHURLOW, KENNETH NICHOLS, 505 Third St., Jackson, Mich. (Age 32. Born Cement City, Mich.) Student, Miami Univ. (1914 to 1915) and Ohio State Univ. (1916 to 1917). *TT 0.5: P 0.5.*—1917 to 1918 Deputy Engr., County Surveyor's Office, on field parties, designed bridges and inspected roads and bridges. *TT 0.6: SP 0.6: D 0.5.*—1918 to 1919 Designer and Draftsman, and 1922 to 1923 Designer and Estimator, A. Bentley & Sons Co., Toledo, Ohio, designed warehouse and commercial buildings and estimated apartment houses, bank building, soldiers' cantonment and sewage-disposal plant. *TT 1.6: P 1.6: D 1.2.*—1919 to 1921 Designer, Estimator and Field Supt., Standard Oil Co., Toledo, in charge of insulation, designed buildings, foundations for stacks, stills and condensers. *TT 2: P 2: RC 1: D 1.*—1923 (about 5 months) Designer and Draftsman, Building

Products Co., Toledo, designing and detailing reinforcing steel for commercial building, schoolhouse and hotel. $TT\ 0.4: P\ 0.4: D\ 0.4$.—1923 to 1926 Civ. Engr., Toledo Edison Co., in charge of office and field work on substations, tower foundations, building changes and motor installations in flour mills. $TT\ 3.5: P\ 3.5: RC\ 3.5$.—1927 to date Civ. Engr., Stevens & Wood, Inc., Jackson, Mich., acting as Designer, Checker and supervising drawings on office buildings, indoor and outdoor substations, machine and tower foundations, garages and service buildings. $TT\ 3: P\ 3: RC\ 1.5: D\ 1.5$.— $TT\ 11.6: SP\ 0.6: P\ 11: RC\ 6: D\ 4.6$. Refers to E. M. Burd, D. A. Davis, R. A. Galbreath, H. A. Hubbell, E. Maerker, R. C. Reese, J. L. Schnitz.

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(1) **SMALL, KENNETH IRVING**, 30 Church St., New York City. (Age 50. Born Dexter, Iowa.) June 1896 to June 1898 Tracer and Draftsman with W. S. McKinney, Designer of special machinery, etc., Chicago, Ill. $TT\ 1: SP\ 1$.—June 1898 to Sept. 1902 Draftsman at Chicago, until Sept. 1898 with Manufacturers Automatic Sprinkler Co., assisting on surveys, then with Chicago Bridge & Iron Works, on bridge and structural work, and after July 1900 with Ralph Modjeski on Northern Pacific R. R. bridge plans, Thebes Bridge, etc. $TT\ 3.2: SP\ 1: P\ 2.2$.—Sept. 1902 to June 1904 about 6 months as Checker, then Chf. Draftsman, Virginia Bridge & Iron Co. of Roanoke, Va. $TT\ 1.7: P\ 1.7: RC\ 1.2$.—June 1904 to date with Chicago Bridge & Iron Works, until Dec. 1909 as Designer, Estimator and Contr. Engr. at Chicago, then Mgr. of New York office, contracting business, all designs and estimates made in office. $TT\ 25.7: P\ 25.7: RC\ 25.7: D\ 25.7$.— $TT\ 31.6: SP\ 2: P\ 29.6: RC\ 26.9: D\ 25.7$. Refers to R. H. Chambers, A. S. Crane, J. E. Gibson, N. S. Hill, Jr., G. T. Horton, A. T. Ricketts, M. J. Trees.

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(4) **SMITH, ALEXANDER FORBES, Jr.**, Eleventh and Washington Sta., Reading, Pa. (Age 33. Born Reading, Pa.) 1919 Ensign, U. S. Naval Academy, Annapolis, Md. $TT\ 4: P\ 4$.—Summers 1917 and 1918 and June 1919 to Dec. 1921 with U. S. Navy, as Midshipman on battleships, on marine engineering, navigation, gunnery and seamanship, and after June 1919 Line Officer, being Div. Watch, Signal, Asst. Eng. and Asst. Fire Control Officer, and Asst. Navigator, U. S. S. Michigan, Gunnery and Mine Laying Officer and 1st Lieut., U. S. S. Mahan, $TT\ 2.5: P\ 2.5$.—Dec. 1921 to June 1922 with Vanderstucker Eng. Co., Reading, Pa., made architectural drawings for and supervised erection of warehouse for Lebanon (Pa.) Plumbing & Supply Co., designed steel for garage and warehouse for Consumers Gas Co., and made drawings and wrote specifications for Nogar Factory Building, Reading, Pa. $TT\ 0.6: P\ 0.6: D\ 0.6$.—June 1922 to June 1923 graduate student, Lehigh Univ.—June 1923 to date with W. S. Barstow & Co., Inc., Engrs. and Constrs for Gen. Gas & Elec. Co., Reading, Pa., as follows: June 1923 to Oct. 1924 on construction of power plant at Middletown, Pa., for Metropolitan Edison Co.; made study of sand, stone and cement, had charge of concrete, reinforcing and brickwork and acted as Inspector during installation of boilers, etc.; Oct. 1924 to Dec. 1925 with Eng. and Design Dept., designed steel work for 12-story office building at Reading, Pa., for changes and addition to power plant at Middletown and for storehouse and garage for New Jersey Power & Light Co., Dover, N. J., also on steel design for storehouse and garage at Lebanon, Pa., etc.; Dec. 1925 to Jan. 1927 as Asst. to Chf. Constr. Engr. supervised construction of storehouse and garage at Lebanon, addition to power plant at Middletown and substations, switching structure, etc., also acted as Material Engr. (during embargo) for construction and equipment of power plant for Florida Public Service Co. on Lake Monroe opposite Sanford, Fla.; since Jan. 1927 supervised construction of 25 000 kw. Gen. Elec. turbine addition, with boilers, etc., to building of Binghamton Light, Heat & Power Co., Johnson City, N. Y., and of power plants for Florida Public Service Co. at Avon Park, Fla., and New Jersey Power & Light Co. at Holland, N. J., also supervised installation of third unit for Broad River Power Co. at Parr, S. C., and reconstruction of Oakland Dam at Susquehanna, Pa., for Northern Pennsylvania Power & Light Co., etc. $TT\ 6.8: P\ 6.8: RC\ 4.4: D\ 1.2$.— $TT\ 13.9: P\ 13.9: RC\ 4.4: D\ 1.7$. Refers to S. A. Becker, A. P. Campbell, M. Duncan, R. J. Fogg, M. O. Fuller, B. T. Mial, J. G. Shryock.

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(1) **SMITH, SHERWOOD BADGER**, 140 Cedar St., New York City. (Age 29. Born Raleigh, N. C.) 1920 U. S. Naval Acad. 1928 C. E., Cornell Univ. $TT\ 4: P\ 4$.—July 1917 to June 1920 Midshipman, U. S. Naval Acad.—June 1920 to Aug. 1926 with U. S. Navy, until June 1921 as Officer on battleship *New Mexico*; June 1921 to Aug. 1923 Asst. Engr. (8 months) and Chf. Engr. of destroyer *J. D. Edwards* on operation and repairs, including lifting turbine casings; Aug. 1923 to Aug. 1925 as Deck Officer on gunboat *Tulsa*; made numerous analyses of gunnery practices, locating position of striking, plotting position of ship and target, etc.; Aug. 1925 to Feb. 1926 Student Aviator at Pensacola, Fla., studying aerology, theory of flight, airplane construction, motors and radio; Feb. to Aug. 1926 Officer,

destroyer *Barker*; astronomical observation, navigation and piloting, study of tides and tidal current, etc., work also covered periodical checking of telescopic sights, investigation of islands north of Luzon for aviation fields, various surveys, soundings, etc. *TT 2.2: SP 0.5: P 1.7: RC 1.5*.—Aug. 1926 to Feb. 1928 student, Cornell Univ.—Feb. 1928 to date with Raymond Concrete Pile Co., New York City, as Cadet learning shop work, drafting, etc., Engr. on caisson work, Aetna Life Insurance job, Hartford, Conn., 6 months Supt. on small jobs and 2 months with Sales Dept. *TT 1.4: SP 0.7: P 0.7: RC 0.7*.—*TT 7.6: SP 1.2: P 6.4: RC 2.2*. Refers to F. A. Barnes, J. W. Taussig, M. M. Upson, L. C. Urquhart, H. E. Weatherlow.

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(2) **SOUTHWORTH, EDWIN WARREN, Jr.**, 22 Oxford St., Winchester, Mass. (Age 26. Born Winchester, Mass.) 1926 B. S., Mass. Inst. Tech. *TT 4: P 4*.—Sept. 1926 to May 1927 Rodman, and May 1927 to date Instrumentman, Metropolitan District Water Supply Comm. *TT 1.7: SP 1.7*.—*TT 5.7: SP 1.7: P 4*. Refers to C. L. Coburn, C. R. Day, R. S. Holmgren, K. R. Kennison, F. E. Winsor.

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(4) **STEVENS, WILLIAM GEORGE, Jr.**, Philadelphia, Pa. (Age 25. Born Philadelphia, Pa.) Sept. 1926 to June 1927 and Sept. 1928 to date (evenings) student in Structural Eng., Drexel Inst. (2 years) and since Sept. 1929 in Bldg. Constr. Eng., New York Univ.—Oct. 1924 to Nov. 1925 Rodman, and Nov. 1925 to April 1929 Transitman, Bureau of Eng., City of Philadelphia, on line and grade for sewers, storm water channels and pumping stations, topographical surveying, computations and estimates. *TT 3.1: SP 1.6: P 1.5*.—April 1929 to March 1930 Jun. Engr., New York & Queens Elec. Light & Power Co., underground conduit crossings on highway and railroad bridges, special studies and designs to provide space for sub-surface structures in interference. March 1930 to date with Philadelphia & West Chester Traction Co., Philadelphia, Pa. *TT 1: P 1*.—*TT 4.1: SP 1.6: P 2.5*. Refers to H. M. Beaumont, J. E. Gill, W. Z. Kline, H. G. Leng, R. P. Miller.

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(3) **TOTH, JOHN FRANK**, Eleventh St. and Peoples Ave., Troy, N. Y. (Age 22. Born Stafford Springs, Conn.) 1929 C. E., Rens. Pol. Inst. *TT 4: P 4*. Refers to E. R. Cary, L. W. Clark, T. R. Lawson, H. O. Sharp.

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(12) **VEATCH, FRED MILTON**, Federal Bldg., Boise, Idaho. (Age 28. Born Bloomington, Ill.) 1922 B. S. C. E., Univ. of Idaho. *TT 4: P 4*.—June 1922 to July 1923 Draftsman, Oregon Short Line R. R. *TT 0.5: SP 0.5*.—July 1923 to date with Water Resources Branch, U. S. Geological Survey, Boise, Idaho, on stream gauging and measurement, gauging-station construction, etc., until July 1924 as Field Asst., then (3 years) Jun. Engr., and since July 1927 Asst. Engr.; work included charge of field and office work for Kootenai River investigation near Bonners Ferry, Idaho, as to effect of proposed regulation of Kootenai Lake, B. C., on Idaho reclamation interests. *TT 6.6: P 6.6: RC 2.7: D 0.7*.—*TT 11.1: SP 0.5: P 10.6: RC 2.7: D 0.7*. Refers to G. C. Baldwin, L. Crandall, I. C. Crawford, J. C. Hoyt, T. R. Newell, G. L. Parker, C. G. Paulsen, H. A. Sewell.

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(15) **VON SCHOELER, VICTOR JOSEPH**, Box 1103, El Paso, Tex. (Age 32. Born Torras, La.) 1925 B. S. in Eng., N. Mex. Coll. of Agri. and Mech. Arts. *TT 4: P 4*.—Aug. 1915 to Jan. 1916 Rodman, Mississippi River Comm. *TT 0.2: SP 0.2*.—Jan. to June 1916 student in Civ. Eng., Louisiana State Univ.—March 1917 to Nov. 1918 Instrumentman and Draftsman, Jaehncke Shipbuilding Corporation, on construction of shipyard, Madisonville, La., survey and layout. *TT 0.9: SP 0.9*.—May 1919 to May 1920 with New Mexico Highway Dept., until Sept. 1919 as Instrumentman with location party, then Chf. Draftsman, 1st Dist. Office, in charge of plans for Federal aid projects, made estimates and designed small structures. *TT 0.8: SP 0.1: P 0.7: RC 0.7: D 0.7*.—June to Aug. 1923 Chf. of Party, U. S. Reclamation Service, on irrigation and drainage surveys, Elephant Butte Project. *TT 0.8: P 0.8: RC 0.8*.—Summers 1920-1922 and Aug. 1923 to March 1924 with New Mexico Highway Dept., as Instrumentman and Inspector on construction, etc. and after Aug. 1923 Location Engr., responsible for location of Federal aid highways, recommendation of grades, structures, investigation of local materials, etc., in full charge of party. *TT 0.8: SP 0.2: P 0.6: RC 0.6*.—March to May 1924 Location Engr. on county highway, for County Engr., Dona Ana County, N. Mex. *TT 0.8: P 0.2: RC 0.2*.—May to Dec. 1924 Location Engr., Louisiana Highway Dept., responsible for location of State and Federal aid highways, designed grades, recommended drainage structures, investigated local materials, represented Highway Dept. in public relations, in full charge of location party. *TT 0.6: P 0.6: RC 0.6: D 0.6*.—June to Sept. 1925 Draftsman, U. S. Reclamation Service, Las Cruces office. *TT 0.1: SP 0.1*.—Oct. 1925 to date with Southern Pacific Co., Rio

Grande and New Mexico Divs., until Dec. 1925 as Eng. Inspector on erection of 200-ton concrete coal chutes in New Mexico, then Draftsman on railroad maintenance, track, signals, bridges and buildings, drainage, etc., and since July 1927 Asst. Engr., field and office, on maintenance, surveys, studies of track and drainage problems, design of structures, etc. *TT 3.5: SP 0.6: P 2.9: RC 2.9: D 1.2.—TT 11.4: SP 2.1: P 9.3: RC 5.3: D 2.5.* Refers to E. L. Bandy, J. M. Fourmy, E. L. Jahncke, A. O. Peabody, J. R. Wendt, Sr., W. H. W. Yeo.

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(1) **WAGNER, JOHN HAROLD**, Care, McClintic-Marshall Co., 39 Broadway, New York City. (Age 33. Born Harrisburg, Pa.) 1920 C. E., Lehigh Univ. *TT 4: P 4.*—July 1920 to date with McClintic-Marshall Co., until Dec. 1925 at Pittsburgh, Pa., successively as Draftsman, Timekeeper, Erection Engr., in direct charge of erection of River Rouge Works, Detroit, and assembly plant at Louisville, Ky., for Ford Motor Co., Mt. Vernon (Ill.) Car Works, etc. (1½ years), and Asst. Erection Mgr., assisted on design of wood falseworks for Smith Memorial Bridge at Castleton, N. Y., and (under direction of Mgr. of Erection) handled Washington St. Bridge, Pittsburgh, Erie (Pa.) Trust Co. Bldg., car shops, Pennsylvania R. R. at Altoona, etc. (1 year), and since Dec. 1925 Mgr. of Erection, in charge of erection of Chicago Athletic Club, sheet and tin-plate mills for Youngstown Sheet & Tube Co., numerous buildings for Inland Steel Co. at Indiana Harbor, cement plant at Davenport, Iowa, in Chicago Dist., and (since Dec. 1927) in direct charge of all work in New York Dist., except Hudson River Bridge; work included High Bridge Arch span over Harlem River, bridge over Bronx River, Riverside Drive Viaduct, St. George Hotel, New York Central Bldg., Williamsburg Savings Bank, etc., and City Bank Farmers Trust and Salmon Bldg. (under construction). *TT 8.8: SP 1: P 7.8: RC 5.3: D 1.5.—TT 12.8: SP 1: P 11.8: RC 5.3: D 1.5.* Refers to J. J. Ashton, G. A. Caffall, E. A. Gibbs, J. Jones, R. MacMinn, R. A. Pendergrass.

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(5) **WALKER, GEORGE ALAN**, P. O. Box 728, Baltimore, Md. (Age 32. Born Mendon, Mich.) Student, Olivet (Mich.) Coll. (Sept. 1917 to March 1918 and Sept. 1920 to June 1921), Harvard Eng. School (1921 to 1923) and George Washington Univ. (1923 to 1924, evenings). *TT 1: P 1.*—July to Nov. 1915 Rodman and Draftsman with City Engr., Flint, Mich. *TT 0.2: SP 0.2.*—March 1916 to Sept. 1917 with Consumers Power Co., Flint, on survey and mapping of electrical and gas distribution systems, interconnection and load balancing, etc. *TT 0.8: SP 0.8.*—April 1918 to July 1919 with Engr. Corps, U. S. Army, on camp drainage and sanitation, design and construction of ways, pile driver, etc., for river-barge repair station in France. *TT 1.1: SP 0.1: P 1.*—March to June 1920 Designer Draftsman, Fisher Body Co., Detroit, Mich., braces and body hardware for automobiles. *TT 0.8: P 0.8.*—June to Sept. 1920 Instrumentman, Michigan State Highway Dept., on preliminary surveys. *TT 0.2: SP 0.2.*—Aug. to Dec. 1923 Res. Engr. for Village of Chevy Chase, Md., on street pavements (design and general supervision by Bureau of Public Roads, Dept. of Agri.). *TT 0.4: P 0.4: RC 0.4.*—Jan. to July 1924 Eng. Draftsman, Charles B. Hawley & Co., Washington, D. C., conduit, substation and transmission line design for hydro-electric plants. *TT 0.5: P 0.5.*—Aug. 1924 to Aug. 1929 Designing Engr., City of Grand Rapids, Mich., being Chf. of Party for surveys on reconstruction program (\$2 500 000), preliminary study, design and general supervision of construction of storm and sanitary sewers in new districts (\$150 000 to \$170 000), design of Monolithic sewer through center of City (\$235 000) and assisted on design of sewage-treatment plant (\$2 500 000). *TT 5.1: P 5.1: RC 5.1: D 3.8.*—Sept. 1929 to date Designing Engr., The H. K. Ferguson Co., Baltimore, Md., on design and general supervision of construction of storm and sanitary sewers and subsoil drainage for Western Elec. Co.'s plant. *TT 0.6: P 0.6: RC 0.6: D 0.6.—TT 10.2: SP 1.3: P 8.9: RC 6.1: D 4.4.* Refers to S. A. Greeley, C. B. Hawley, H. S. Jacoby, C. A. Latimer, W. W. Perrin, E. C. Shoecraft, D. C. Walser.

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(14) **WELLS, CHARLES**, U. S. Geological Survey, Topeka, Kans. (Age 26. Born Chanute, Kans.) 1928 B. S., Univ. of Mich. *TT 4: P 4.*—Feb. to July 1928 Rodman, Atchison, Topeka & Santa Fe Ry. *TT 0.2: SP 0.2.*—Aug. 1928 to date Jun. Engr., Surface Water Div., Water Resources Branch, U. S. Geological Survey, engaged in water resources and investigations in Arizona and Kansas Dists. *TT 1.6: P 1.6.—TT 5.8: SP 0.2: P 5.6.* Refers to C. M. Buck, W. E. Dickinson, C. T. Johnston, T. J. Mitchell, J. B. Spiegel.

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(3) **WELLS, JOSEPH VAN BRUNT**, 904 Home Savings Bank Bldg., Albany, N. Y. (Age 23. Born Setauket, N. Y.) A. B., B. S., and 1929 C. E., Columbia Univ. *TT 4: P 4.*—May to Oct. 1929 Field and Office Asst. with Jesse W. Wells, Setauket, N. Y., on surveying, highway location and construction and land subdivision. *TT 0.4: P 0.4.*—Oct. 1929 to date Jun.

Engr., U. S. Geological Survey, assisting in supervising and constructing stream-flow gauging stations, making stream-flow measurements and computing daily discharge. $TT\ 0.4: P\ 0.4$.— $TT\ 4.8: P\ 4.8$. Refers to A. W. Harrington, H. F. Hill, Jr., W. J. Krefeld, J. L. Lamson.

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(11) WILLIAMS, NED, 314 West Twenty-Fifth St., Cheyenne, Wyo. (Age 28. Born Easley, S. C.) 1922 B. S., Clemson Coll. $TT\ 4: P\ 4$.—1922-1923 Student, C. E. Coll., Cornell Univ.—July 1923 to May 1925 with Illinois Highway Dept., until May 1924 as Jun. Engr. drew plans and estimated quantities for reinforced concrete and steel highway bridges, then Asst. Highway Engr. on design of reinforced concrete and steel bridges, shop inspections on steel bridge fabrication, field construction and inspection. $TT\ 1.9: P\ 1.9$.—June 1925 to Nov. 1928 with Bridge Dept., Kentucky Highway Dept., as Designer and (after Aug. 1927) also Group Leader, on design and drawings for reinforced concrete highway bridges. $TT\ 3.4: P\ 3.4: RC\ 1.3: D\ 1.3$.—Dec. 1928 to date Designer, Wyoming Highway Dept., in charge of design of concrete and steel highway bridges and inspecting bridge construction. $TT\ 1.3: P\ 1.3: RC\ 1.3: D\ 1.3$.— $TT\ 10.6: P\ 10.6: RC\ 2.6: D\ 2.6$. Refers to C. R. Bloxton, G. F. Burch, L. F. Copeland, H. R. Creal, W. H. Fisher, P. D. Gillham, Z. E. Severson.

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(4) WITTE, WALTER EMIL, 5106 North Carlisle St., Philadelphia, Pa. (Age 46. Born Philadelphia, Pa.) 1912 Diploma, special engineering courses Drexel Inst. and Wharton School, Univ. of Pa. (evenings)—1901 to 1903 with M. Ward Easby, Cons. Engr., Philadelphia, Pa., as Draftsman on steel detailing, (buildings). $TT\ 1: SP\ 1$.—1903 to 1911 with Dodge Coal Storage Co., as follows: 1903 to 1904 steel detailing on bridge tramways, locomotive cranes and large coal-storage plants; 1904 to 1905 on plant for P. & R. Coal and Iron Co., Abrams, Pa., laying out plant, general surveying to prepare site for plant, etc.; 1905 to 1906 in drawing room as Checker and on design and details of Dodge Coal Storage Plants; 1906 to 1907 Field Engr. preparing site (50 acres) for 300 000-ton storage plant for Lehigh Coal and Navigation Co., Lansford, Pa., in charge of foundation work, bridge piers, engine houses, track hoppers, tower and reloaders, etc.; 1908 to 1909 on similar work for plant for Pennsylvania Railroad Co., Old Bridge, N. J., 1909 to 1910 layed out smaller plant for New York, Ontario & Western R. R. Co., Middletown, N. Y.; 1910 to 1911 Field Engr. on plants for Erie R. R. Co., Susquehanna Coal Co., Lehigh R. R. Co., and Havanna Coal Co. $TT\ 6.5: SP\ 1: P\ 5.5: RC\ 5.1: D\ 1$.—1911 to 1913 with Estimating Dept., Link Belt Co., on conveying machinery and reinforced concrete construction, designed several concrete coaling stations including one for Reading R. R. Co. in Philadelphia, also (spare time) private work as Engr. on sidings along new elevated for Reading R. R. Co. Girard Ave. Farmers Market Co. and H. Webber & Co., Philadelphia. $TT\ 3: P\ 3: RC\ 3$.—1913 to 1916 two years course in reinforced concrete with Dept. of City Transit, Philadelphia, Pa., computing and designing Frankford Elevated R. R. (7 miles), also inspection and repair shops in terminal yard, steelwork on curves and subway design; also on design and checked computations on Broad St. Subway Station. $TT\ 3: P\ 3: D\ 3$.—1917 to 1919 with U. S. Army, Ordnance Dept., being 1st Lieut., 4 months studying methods at Midvale Steel Co., then at Colt's P. F. A. Mfg. Co., Hartford, Conn. studying, and later at New England Westinghouse Co., passing on manufacture of, and instructing students in use of Browning machine guns, latter part of time settling claims with different plants around Springfield, Mass. $TT\ 1.5: P\ 1.5: RC\ 1.5$.—1919 in private practice designing and constructing warehouses, garages and residences (total \$500 000). $TT\ 1: P\ 1: RC\ 1$.—1920 with Frankford Elevated R. R., Philadelphia, designing, computing and checking structural steel. $TT\ 1: P\ 1: D\ 1$.—1921 to date with City of Philadelphia, 6 months with Dept. of City Transit, checking drawings, then with Bureau of Highways, 6 months as Asst. Engr., Bridge Div., also had charge of designing and superintending construction of garages, dump wharves, machine shops, also designed pumping station for sewage disposal, water supply, League Island bathing beaches, also designed and superintended stables and oil installation, garbage production plant, and since 1924 with Dept. of City Transit as Squad Boss (Asst. Engr.) on Lehigh Glenwood and Erie Ave. Station, Broad St. Subway, had charge of some station design and of concourse around and through City Hall. $TT\ 7: P\ 7: RC\ 6: D\ 1$.— $TT\ 24: SP\ 2: P\ 22: RC\ 16.6: D\ 6$. Refers to W. T. E. Barber, J. E. Boatrite, C. J. Folk, M. Golder, S. Harris, G. N. Hyland, C. E. Myers, J. B. Myers, H. H. Quimby, W. Samans, F. G. Schworm, C. H. Stevens.

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(15) YINGLING, JOSHUA MAX, 5402 Bonita Ave., Dallas, Tex. (Age 49. Born Perryburg, Ohio.) 1909 Graduate, International Correspondence Schools.—1904 to 1907 Rodman, Chairman and Draftsman, various places. $TT\ 1.5: SP\ 1.5$.—1908 to March 1913 with Lyon County, Kans., 3 years as Deputy County Surveyor in charge of surveys, and instrumentman, then County Engr. designing and supervising building of bridges and in charge of road construction. $TT\ 3: SP\ 1.5: P\ 1.5$.—March 1913 to April 1919 and July 1920 to Dec.

1923 with Blodgett Constr. Co., Fayetteville, Ark., until April 1919 as Contr. Engr. designing and contracting bridges, estimating costs and in general charge of construction, and after July 1920 in charge of all designing, estimating and construction. *TT 9.6: P 9.6: RC 6.5: D 3.5.* —April to Nov. 1919 with 17th C. B. Battery, U. S. Army, at Co. A Officers' Training School for Artillery. —Nov. 1919 to Feb. 1920 Safety Engr., Dirks Blodgett Shipbuilding Co. *TT 0.2: P 0.2.* —Feb. to April 1920 checking designs, Pensacola Ship Building Co. *TT 0.2: P 0.2.* —March 1924 to date Dist. Engr., Austin Bridge Co., Dallas, Tex., in charge of designing, estimating, contracting and construction, in Louisiana (1924-1925), Oklahoma (1926) and Arkansas, Louisiana, Mississippi, etc. (1927 to 1929) and in Dallas office (1st half of 1927 and since July 1929). *TT 5.9: P 5.9: RC 5.9: D 5.9.* —*TT 20.4: SP 3: P 17.4: RC 12.4: D 9.4.* Refers to A. M. Blodgett, J. T. Bullen, J. W. Grace, N. E. Lant, V. H. Smith, I. W. Sylvester, C. E. Zigenbein.

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(8) **ZACK, SAMUEL ISADOR**, 1414 Pratt Boulevard, Chicago, Ill. (Age 29. Born Pondel, Kovno, Russia.) 1922 B. S., Mass. Inst. Tech. *TT 4: P 4.* —Aug. 1922 to date with San. Dist. of Chicago, until Jan. 1924 as Jun. Asst. Engr., assisting on design of sewers and treatment works, in charge of operation of tannery testing station, conducting experiments on friction losses, etc.; Jan. 1924 to Jan. 1926 Jun. Engr., supervising inspection and testing aeration plates for North Side treatment works, assisting in supervising operation of corn products testing station, Morton Grove treatment plant, compiling data, design on treatment works, sewers and experimental units; Jan. 1926 to July 1929 Asst. Engr. on reports and preliminary special studies, estimates and compiling costs of sewers, sewage disposal, industrial wastes, pollution and experimental work; in charge of some experimental work; correlation of data, design, construction and supervision of operation of tannery experimental station, etc.; July 1929 to Jan. 1930 San. Designer, supervising operation of tannery experimental testing station, friction loss tests at North Side treatment works, in charge of treatment works operation data, design and installation of experimental units; since Jan. 1930 Asst. Civ. Engr., designing and installing experimental units, in charge of data, special studies on sewage disposal, etc. *TT 7.6: P 7.6: RC 2.8: D 0.6.* —*TT 11.6: P 11.6: RC 2.8: D 0.6.* Refers to S. A. Greeley, H. L. McMillan, L. Pearse, E. L. Pfanz, H. P. Ramey, C. M. Spofford, L. C. Whittemore.

FOR TRANSFER

FROM THE GRADE OF ASSOCIATE MEMBER

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(1) **ALDRICH, ELLWOOD HARMON**, Assoc. M., 119-37 Metropolitan Ave., Kew Gardens, N. Y. (Elected Oct. 2, 1922.) (Age 35. Born Bloomington, Ill.) 1917 B. S., Beloit Coll., and 1920 B. S. in C. E., Univ. of Ill. *T 4: P 4.* —May to Dec. 1918 2d Lieut., Coast Artillery, U. S. Army, being Instructor in orientation-motor transportation. *TT 0.3: SP 0.3.* —Dec. 1918 to Sept. 1919 Draftsman, American Bridge Co., detailing steel in bridges, mill and office buildings. *TT 0.4: SP 0.4.* —Sept. 1919 to June 1920 student, Univ. of Illinois. —June 1920 to June 1925 City Engr., Wisconsin Rapids, Wis., in charge of engineering, maintenance and construction work of city and municipal water plant, including paving, sewers, bridges, viaducts, parks, playgrounds, etc. *TT 5: P 5: RC 5: D 2.* —June 1925 to July 1927 Asst. and Prin. Asst. Engr., Morris Knowles, Inc., on investigations, reports, design, supervision of drafting, specifications and office supervision of construction of water-filtration and sewage-treatment plants, dams and reservoirs, sewers, pumping stations, etc. *TT 2.1: P 2.1: RC 1.6: D 2.1.* —July 1927 to date Asst. Engr. with Nicholas S. Hill, Jr., New York City, on investigations, reports, design, specifications of water-filtration and treatment plants, sewers, pumping equipment, etc. *TT 2.7: P 2.7: RC 1.6: D 1.6.* —*TT 14.5: SP 0.7: P 13.8: RC 8.2: D 5.7.* Refers to H. H. Chase, J. A. Fulkman, N. S. Hill, Jr., M. Knowles, S. K. Knox, F. F. Mengel.

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(4) **BARTON, WILLIAM HENRY, Jr.**, Assoc. M., Univ. of Pennsylvania, Philadelphia, Pa. (Elected May 8, 1922.) (Age 36. Born Baltimore, Md.) 1917 B. S. in C. E., 1921 C. E., and 1923 M. S., Univ. of Pa. *TT 4: P 4.* —July 1917 to Jan. 1918 and Jan. 1919 to Aug. 1920 Computer, Bureau of Public Roads, Washington, D. C., 6 months in charge of party on economic and military survey, and after Jan. 1919 assisting with research work, and after Nov. 1919 being in charge of investigations of aggregates and concrete. *TT 1.7: SP 0.5: P 1.2: RC 1.2: D 0.5.* —Jan. 1918 to Jan. 1919 Sergeant (2d Lieut., San. R. C.), San. Corps, U. S. Army, immediately in charge of field and office work in San. Eng. Sec. No. 1, on swamp drainage for mosquito control. *TT 1: P 1: RC 1.* —Sept. 1920 to date

with Univ. of Pennsylvania, until July 1923 as Instructor in Civ. Eng., in charge of work in roads and pavements and Asst. in materials testing and concrete, and since July 1923 Asst. Prof. of Highway Eng., in charge of highway teaching and of aggregates, cement and concrete laboratory; Asst. in general courses in Civ. Eng.; summers 1921-1923 and 1926 Highway Research Specialist, U. S. Bureau of Public Roads, Washington, D. C., investigations in materials, concrete, etc.; summers 1924, 1927 and 1929 Senior Material Inspector to Field Material Engr., field inspections and investigations for Testing Laboratory, Pennsylvania Dept. of Highways, Harrisburg, Pa., instructing and testing inspectors. TT 9.5: P 9.5: RC 6.7.—TT 16.2: SP 0.5: P 15.7: RC 8.9: D 0.5. Refers to H. C. Berry, A. J. Boase, A. T. Goldbeck, H. S. Mattimore, H. H. Miller, W. E. Rosengarten, F. P. Witmer.

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(11) BEANFIELD, RUFUS McCLELLAN, Assoc. M., 1876 Middleton Pl., Los Angeles, Cal. (Elected March 11, 1919.) (Age 43. Born San Francisco, Cal.) 1904-1907 Midshipman, U. S. Naval Academy.—1908 to 1909 Estimator, Instrumentman and later Bldg. Inspector, Associated Pipe Line Co. TT 0.5: P 0.5.—1909 Field Officer, later Topographer, Southern Pacific R. R. TT 0.2: P 0.2.—1909 to 1911 Jun. Engr. and Transitman on fortification work, San Francisco Bay, U. S. Engr. Corps; also Civ. Engr. and Supt. of Constr., War Dept., supervising and designing buildings, road work, concrete dams, water and sewer systems, Ft. Mead, S. Dak.; later in charge of construction of buildings, Ft. Mills, Philippine Islands. TT 2.1: P 2.1: RC 1.2: D 1.2.—1911 Gen. Supt. for R. M. Loper, Gen. Contr., Manila, P. I., supervising several large buildings. TT 0.4: P 0.4: RC 0.4.—1912 Asst. Engr. Bureau of Public Works, on structural and architectural design of public buildings, concrete wharf, bulkheads, warehouses and bridges; also invented and patented gravity distributing system for placing concrete. TT 0.6: P 0.6: RC 0.5: D 0.5.—1912 to 1915 Supt. of Constr. with State Engr. of California, supervising construction of a number of public buildings, including mechanical equipment. TT 3: P 3: RC 3.—1915 to 1917 Structural Engr., U. S. Dept. of Agriculture, on investigation covering design of railroad and marine terminal markets, sheds, warehouses, cold-storage facilities and equipment for wholesale and retail markets. TT 2: P 2: RC 2: D 2.—1917 to 1919 Capt., U. S. Engrs.; being Topographical Officer, 8th Engrs. (Mounted), on design and construction of reinforced concrete swimming tank, Ft. Bliss, Tex., location of 25 miles of highway through Sacramento Mountains, jointly for U. S. Dept. of Interior and War Dept. in New Mexico; submitted report covering location, rights-of-way, methods of constructing roads and designs for culverts and bridges; active service with LaFayette Div. TT 2: P 2: RC 1: D 0.5.—1919 to 1920 Senior Engr., Div. of Shipyard Plants, Emergency Fleet Corporation, reports on design of dry docks and marine railways, involving loans by Emergency Fleet Corporation to private corporations, studies of economics of shop layouts, type of machines, etc., design of bulkheads, wharves, etc.; later Senior Examiner, Div. of Cancellations, investigating claims (several million dollars), reports of appraised values of improvements and equipment and investigation of expenditure and commitment of material; also Structural Engr. with M. C. Couchot, Cons. Engr., on structural design (2 months) and Constr. Engr., Lakewood Eng. Co., on studies and reports on economics of construction plants and operation of same (2 months). TT 1: P 1: RC 0.6: D 0.8.—1920 to 1921 Constr. Engr. with W. A. Kramer, Contr. Engr., on design and cost estimates of construction plants and railroad facilities, including operations for large concrete dam work, camp-sanitation and gravel-plant operation. TT 0.5: P 0.5: RC 0.5: D 0.4.—1921 to 1922 Asst. Gen. Supt., Don Pedro Dam Project, Turlock and Modesto Irrigation Dists., design of construction plant and supervision of construction. TT 1: P 1: RC 1: D 1.—1922 to 1925 Chf. Engr. with John C. Austin and Frederic M. Ashley, Archts., on structural and mechanical design of buildings, including Shrine Civic Auditorium (\$6 000 000). TT 3: P 3: RC 3: D 3.—1925 to date Cons. Engr., on structural design and supervision, investigations and reports covering valuation of physical properties, operation of industrial plants, checking corporation statements of stock and bond issues, on design and installation of mechanical equipment of buildings, cost analysis of construction work, involving large dams, tunnel work, heavy excavation, design of construction plants, etc. TT 5: P 5: RC 5: D 5.—TT 21.3: P 21.3: RC 18.2: D 14.4. Refers to L. Aldrich, D. M. Baker, A. F. Barnard, B. Benfield, H. D. Dewell, F. H. Fowler, J. B. Leonard, F. A. Noetzli, F. Thomas.

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(10) BIRD, HAROLD CRUSIUS, Assoc. M., Duke Univ., Durham, N. C. (elected Junior, Nov. 27, 1917; Assoc. M., May 12, 1919.) (Age 41. Born Litchfield, Conn.) 1908 Ph. B., Sheffield Scientific School and 1911 C. E., Yale Univ. TT 4: P 4.—June 1905 to June 1908 (vacations and evenings) with Central New England Ry., assisting with construction accounts, compiling statistics and later in charge of statistical reports, establishing records showing depreciation of equipment, etc.—June 1908 to Oct. 1910 (except $\frac{1}{2}$ year) with

Buck & Sheldon as Rodman in charge of surveys, Asst. on triangulation, New York-Connecticut State Line, being in charge traverse party running line from Fort Chester to Kent, Connecticut Representative on party setting monuments, plotted line to Kent; Designer, sewage-pumping station for Woodmere, L. I., staked out some state highway construction, designed and detailed piping connected with 1,000-gal. pump in concrete well in quicksand for Pope Mfg. Co., had charge of erection of reinforced concrete drop shop for Billings & Spencer Co., Dividend, Conn., with steel roof trusses, construction of sewer system to Connecticut River, foundations for 7-ton steam drops, etc.; 1910 (6 months) with C. B. Vorce of Sanderson & Porter, New York, at Lake Toxaway, N. C., in charge drafting room on preliminary survey for 50,000-h. p. water power development, and of field and office on 45,000-acre property survey with many conflicting land grants in Blue Ridge Mts., North and South Carolina, including 15 sq. miles of topography. $TT 2.3: P 2.3: RC 1.5: D 0.2$.—Oct. 1910 to June 1911 Asst., Sheffield Scientific School. $TT 0.7: P 0.7$.—Oct. 1911 to 1914 Asst. Prof., 1914 to May 1917 Associate Prof., and May 1917 to June 1923 Prof. and Head of Dept. of Civ. Eng. Pennsylvania Military Coll., Chester, Pa.; also Oct. to Dec. 1918 in charge S. A. T. C. courses in Eng.; Sept. 1917 to June 1918 on numerous private surveys, staking out property, buildings, property disputes, etc.; June to Oct. 1918 with Ford, Buck & Sheldon (Buck & Sheldon) in charge of surveys, especially boundary disputes. $TT 12.5: P 12.5: RC 8.7: D 6.1$.—June 1923 to Sept. 1926 with Aird-Don Co., Troy, N. Y., giving technical advice on sanitary engineering specialities and designing heating layouts, after 1924 acted as Purchasing Agent (\$2,000,000 annually).—Sept. 1926 to Sept. 1929 Prof. of Civ. Eng. and Sept. 1929 to date Chairman, Civ. Eng. Dept., Duke Univ.; also July to Sept. 1928 with Boston & Maine R. R., calculating depreciated capacities of bridges, strengthening various bridges and abutments, redesign of three and checking two plate girders for St. Johnsbury & Lake Champlain R. R., W. Va. P. & P. Co. factory, Mechanicville, making preliminary estimates for forty minor bridges, etc. $TT 3.5: P 3.5: RC 3.5: D 3.5$.— $TT 22.2: P 22.2: RC 13.7: D 9.8$. Refers to W. J. Backes, W. Bowie, H. R. Buck, C. E. Myers, J. C. Tracy, H. J. Wild.

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(14) BROWN, CARL WRIGHT, Assoc. M., 217 Cherry St., Jefferson City, Mo. (Elected Nov. 26, 1923.) (Age 43. Born Vandalia, Mo.) 1910 B. S. in C. E., Univ. of Mo. $TT 4: P 4$.—March 1910 to Jan. 1911 Asst. Engr., M. of W., Burlington R. R., Alliance, Nebr., in charge of survey party and maintenance construction. $TT 0.8: P 0.8: RC 0.8$.—Jan. 1911 to Feb. 1916 in private practice and contracting. $TT 5.1: P 5.1: RC 5.1$.—Feb. 1916 to Feb. 1918 County Highway Engr., Ralls County, Mo., in charge of road construction and maintenance. $TT 2: P 2: RC 2: D 2$.—Feb. 1918 to date with Missouri State Highway Dept., until Aug. 1918 Office Engr., Aug. 1918 to Aug. 1919 Chf. Clerk in charge of administration, Aug. 1919 to March 1920 Chf. of Plans and Surveys, and since March 1920 Asst. Chf. Engr., having general supervision of all work. $TT 12.1: P 12.1: RC 12.1: D 10.6$.— $TT 24: P 24: RC 20: D 12.6$. Refers to C. E. Jacoby, F. Kersting, H. H. Lotter, E. J. McCausland, H. P. Mobberly, W. M. Spann.

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(15) CHOKLA, LOUIS MOSES, Assoc. M., City Hall, Austin, Tex. (Elected Oct. 12, 1925.) (Age 49. Born Palesti, Bessarabia, Russia.) 1913 C. E., Univ. of Tex. $TT 4: P 4$.—Sept. 1913 to May 1914 Chainman and Rodman, State Levee and Drainage Board, Austin, Tex., computations. $TT 0.8: SP 0.8$.—May 1914 to Aug. 1915 Surveyman, U. S. Reclamation Service, in New Mexico, Instrumentman on construction, setting forms, etc., triangulation and estimates. $TT 0.8: SP 0.6: P 0.2$.—Sept. to Dec. 1915 Engr. for A. M. Clopton, Contr., on Austin San Antonio Post Road, highway work, looking after materials, estimates, etc. $TT 0.3: P 0.3: RC 0.3$.—Jan. to Aug. 1916 Draftsman and Computer, Gulf, Colorado & Santa Fe R. R. $TT 0.7: P 0.7$.—Aug. 1916 to Jan. 1920 and Jan. to Oct. 1923 Engr. of Computations, City Engr.'s office, Dallas, Tex., assessments and estimates on street improvements, design of storm sewers, culverts, retaining walls, etc. $TT 4: P 4: RC 4: D 1.6$.—Jan. 1920 to Oct. 1922 Engr. in charge of work, Flippin Prather Realty Co., Highland Park, Dallas, street grading, sanitary and storm sewers, water mains, paving and laying out additions to Highland Park. $TT 2.7: P 2.7: RC 2.7$.—Oct. 1923 to Sept. 1928 in private practice, mapping, surveying, laying out additions, calculating and designing for engineers and architects and supervising construction. $TT 4.9: P 4.9: RC 3.6: D 1.3$.—Sept. 1928 to date Engr. in charge of paving, City of Austin (about \$4,000,000). $TT 1.5: P 1.5: RC 1.5: D 0.7$.— $TT 19.2: SP 0.9: P 18.8: RC 12.1: D 3.6$. Refers to E. Couch, W. M. Elliot, H. R. F. Helland, E. L. Myers, W. J. Powell, G. G. Wickline, E. A. Wood.

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(4) de CHARMS, RICHARD, Assoc. M., 78 Yeager Ave., Kingston, Pa. (Elected Junior Feb. 4, 1914; Assoc. M., June 1, 1920.) (Age 42. Born Denver, Colo.) Licensed Structural Engr., State of New Jersey and Prof. Engr., State of Pennsylvania.—1912 B. S. in

Highway Eng. and B. S. in Civ. Eng., and 1917 C. E., Pa. State Coll. TT 4: P 4.—July to Dec. 1912 Res. Engr. Chester Short Line, on construction of 5 miles of double tracking, including trestles and paving contracts. TT 0.5: P 0.5.—Dec. 1912 to March 1914 Transitman and Asst. Engr. on construction of 16 miles of railroad, including design and layout of terminal facilities, in Brunswick, Ga. and inspection of 4 miles of pile trestles across Altama River, also Prin. Asst. to Chf. Engr. on reinforcement for foundations for 220-ft. span steel swing bridge. TT 1.1: SP 0.1: P 1: RC 0.5: D 0.5.—April 1914 to July 1916 Asst. Engr. on construction of marine terminals (\$1 250 000) for Ocean Steamship Co., Savannah, Ga. TT 2.2: P 2.2: RC 2.2.—Aug. to Oct. 1916 Engr. in charge of design and construction of reinforced concrete seawall and docks at Jekyll Island, Ga. TT 0.3: P 0.3: RC 0.3.—Oct. 1916 to May 1917 and Aug. 1919 to June 1920 Structural Draftsman in office of Engr. of Structures, Boston & Maine R. R., Boston, Mass. TT 1: SP 0.4: P 0.6: D 0.6.—May 1917 to July 1919 1st Lieut., Engrs., U. S. A. over 1½ years in France and Germany, being Acting Co. Commander and Chf. Draftsman, Dept. of Rys. and Docks S. O. S., Tours, France, and in charge of troops on light railway construction under fire. TT 2.2: P 2.2.—July 1920 to April 1921 and Aug. to Nov. 1923 Bridge Draftsman, Central Railroad of New Jersey, on design of steel and concrete bridges. TT 0.8: SP 0.3: P 0.5: D 0.5.—April 1921 to Aug. 1923 Bridge Designer and Asst. Bridge Engr., New Jersey Highway Comm., on design of steel and reinforced concrete highway bridge (\$3 500 000) and service station (\$150 000) and in charge (under Bridge Engr.) on design and construction of bridges (\$1 500 000). TT 2.3: P 2.3: RC 2.3: D 2.3.—Nov. 1923 to May 1925 with Frank P. McKibben, Black Gap, Pa., as Res. Engr. on design and construction of steel highway bridge (\$500 000) across Allegheny River at Oil City, Pa. TT 1.5: P 1.5: RC 1.5: D 0.5.—June 1925 to July 1926 with Frank P. Graham, Grove City, Pa., as Bridge Engr. in charge of design and construction of about 25 highway bridges. TT 1.1: P 1.1: RC 1.1: D 0.6.—Aug. 1926 to date with Walter S. Rae, Gen. Contr., Pittsburgh, Pa., as Res. Engr. and Chf. Engr., on construction of reinforced concrete highway bridge (\$2 560 000) across the Susquehanna River at Wilkes-Barre, Pa., etc. TT 3.6: P 3.6: RC 3.6: D 1.—TT 20.6: SP 0.8: P 19.8: RC 11.5: D 6. Refers to A. Blair, A. H. Dakin, W. G. Grove, F. P. McKibben, J. L. Vogel, J. J. Yates.

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(2) ENNIS, WILLIAM JOSEPH, Assoc. M., 330 Cornwall St., Hartford, Conn. (Elected June 1, 1925.) (Age 36. Born Hartford, Conn.) 1918 B. S. in Architecture, Catholic Univ. of America, Washington, D. C. TT 2: P 2.—Summer 1916 Clerk of Works, Material Checker, Rodman, Timekeeper, and Draftsman on minor detailing for residence and factory construction, R. F. Jones Constr. Co., Hartford, Conn.—Summer 1917 Rodman and Transitman, summer 1918 Eng. Inspector, and Sept. 1918 to Sept. 1919 Field Engr., New York, New Haven & Hartford R. R. Co., last year in responsible charge of maintenance-of-way construction, designed and supervised construction of 6-track bulk yard and directed construction of reinforced concrete bridge abutments and retaining walls and bridge work. TT 1.1: SP 0.1: P 1.—Sept. 1919 to Aug. 1922 with Buck & Sheldon, Inc., Cons. Engrs. and Archts., Hartford, 1 year as Architectural and Structural Draftsman on buildings, Transitman on sewerage and water systems, computing and mapping; then (about 2 years) in responsible charge of design (chiefly architectural) and specification writing on schools, hospital, factory, warehouse and residence buildings. TT 2.5: SP 0.5: P 2: RC 2: D 2.—Aug. 1922 to date Deputy Bldg. Commr., Dept. of Building Inspection, Hartford, Conn., in responsible charge of examining and checking plans and specifications and issuing permits (over \$122 000 000), investigating and writing reports on structural failures in buildings, testing construction materials, compiling reports on tests and approving for use in City, Consultant on building code, zoning requirements, etc.; directing inspections and correcting violations; designing alterations, remodelling, underpinning foundations, etc., for municipally owned buildings. TT 7.6: P 7.6: RC 7.6: D 5.—TT 15.2: SP 0.6: P 14.6: RC 9.6: D 7. Refers to C. J. Bennett, H. R. Buck, E. W. Bush, R. F. Gadd, J. T. Henderson, A. S. Lynch.

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(2) GREENLEAF, FRED BACON, Assoc. M., 20 Washington St., Auburn, Me. (Elected Aug. 31, 1915.) (Age 46. Born Auburn, Me.) 1907 B. S., Dartmouth Coll.—1908 C. E., Thayer School of Civ. Eng. TT 4: P 4.—May to Sept. 1907 Instrumentman, Great Northern Paper Co., giving lines and grades on new mill, East Millinocket, Me.—June to Dec. 1908, June to Oct. 1910 and June 1911 to date member of firm, and since March 1914 Treas., J. A. Greenleaf & Sons Co., (incorporated 1909) engaged as follows: June 1908-Dec. 1911 Supt. in charge of four small jobs in Maine, including sub-station for street railway, wheel pit of woolen mill at Camden, Me., fish ponds for state hatchery at Oquossoc, Me., repairs to foundation of Androscoggin Mill, Lewiston, Me., and to gates at outlet of Lake Winnipisauke, Lakeport, N. H., and installing 1 750-h.p. water-wheel at International Paper Co. Mill, Herkimer, N. Y.; Jan. 1912 to Feb. 1913 Res. Engr. for

International Paper Co. and Supt. of Constr. for H. P. Cummings Constr. Co., on a new ground wood mill at Wilder, Vt., considerable ledge work and coffering and installation of four water-wheels, also supervised building and equipping of grinder and screen rooms; May 1913 to Feb. 1914 Div. Supt., H. P. Cummings Constr. Co., Ware, Mass., on work for International Paper Co., being directly in charge of construction of dam across Hudson River at Glens Falls, N. Y.; since March 1914 firm has built several additions to plants of Great Northern Paper Co. at Millinocket, Me., and Pejepscot (Maine) Paper Co., and has designed several warehouses and manufacturing plants, dams, hydro-electric plants and gas-holder foundations; also designs forms, temporary bridges and railroad trestles and lays out most of work. *TT 19.3: P 19.3: RC 19.3: D 4.* — *TT 23.3: P 23.3: RC 19.3: D 4.* Refers to C. M. Allen, P. L. Bean, F. C. Bowler, H. C. Daggett, H. S. Ferguson, R. Fletcher, C. A. Holden, F. H. Mason, A. H. White.

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(8) **HANCOCK, EDWIN**, Assoc. M., 1509 Jackson Blvd., Chicago, Ill. (Elected Sept. 10, 1923.) (Age 45. Born Chicago, Ill.) 1908 Lewis Inst., Chicago, Ill. *TT 4: P 4.* — 1908 to 1911 Res. and Office Engr. with Wm. B. Ewing, and 1911 to 1914 in partnership with Mrs. W. B. Ewing, F. L. Stone and W. Allen, municipal engineering, being Chf. of Party on field surveys, Draftsman and Designer and Res. Engr. on construction of sewers, water mains and paving, setting line and grade stakes and supervising work. *TT 5.5: SP 0.5: P 5: RC 5: D 5.* — 1914 to date in private practice as Edwin Hancock Eng. Co., municipal engineering, being Chf. Engr. on design, plans and specifications and supervision of construction of sewer systems, sewage-disposal plants, with settling tanks, filter beds and pumping stations, water-works, with distribution system wells, elevated steel tanks, concrete reservoirs and pumping equipment, concrete, brick, asphalt and macadam pavements; municipal buildings for village halls, fire stations, electric street lighting systems, etc., for 35 cities in Illinois; at present Chf. Engr., St. Ferdinand Sewer Dist. (12 000 acres). St. Louis County, Mo., designing and preparing plans for construction of sanitary and storm sewer systems (diameter 8 in. to 12 ft., vitrified tile pipe and segmental block, reinforced concrete pipe and monolithic concrete). *TT 16: P 16: RC 16: D 16.* — *TT 25.5: SP 0.5: P 25: RC 21: D 21.* Refers to C. B. Burdick, A. W. Consoer, W. D. Gerber, P. E. Green, L. R. Howson, G. C. D. Lenth, A. Marston, F. A. Randall.

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(2) **KEITH, SCOTT**, Assoc. M., 62 Hartford St., Newton Highlands, Mass. (Elected March 16, 1925.) (Age 32. Born Newton, Mass.) 1918 B. S., Mass. Inst. Tech. 1919 S. B. in Civ. Eng., Harvard Univ. *TT 4: P 4.* — Oct. 1918 to Jan. 1919 completed course in Naval Architecture and Marine Eng., and June 1919 to June 1920 Asst. in Civ. Eng. Dept., being Asst. in hydraulics and hydraulic research laboratory, Massachusetts Inst. of Technology. *TT 0.5: SP 0.5.* — Jan. to June 1919 Draftsman, Hull Dept., Wm. Cramp & Sons Ship & Engine Bldg. Co., on design of bulkheads for scout cruisers, U. S. Navy. *TT 0.2: SP 0.2.* — June 1920 to date Asst. Engr. with Metcalf & Eddy, Engrs., Boston, Mass., on surveys, investigations, reports, design, construction and writing contracts and specifications on water-works, sewerage and sewage-disposal projects, including design of sewage-sedimentation tanks at El Paso, Tex., design and construction of streets, sewers and water pipes at Hopedale, Mass., and of standpipes and foundations for standpipes at Milford and Winchester, Mass.; investigations and design of sewers for districts in Springfield, Mass., and of sewerage and drainage for districts in Schenectady, N. Y., including report on latter; appraisal of Consolidated Water Co. of Utica, N. Y.; past 4 years and at present in charge of contracts and specifications involving over 40 projects (about \$6 500 000), including equipment for and construction of sewage-treatment plants at North Toronto, Canada, Dayton, Ohio, and Allentown, Pa., and water and sewage pumping stations at Dayton, also construction of 2 500 000-gal. water standpipe for Montclair, N. J. *TT 9.7: P 9.7: RC 6.8: D 5.* — *TT 14.4: SP 0.7: P 13.7 RC 6.8: D 5.* Refers to J. B. Babcock, 3d, H. K. Barrows, E. S. Chase, R. W. Horne, G. L. Hosmer, F. A. Marston, A. L. Shaw, C. W. Sherman, C. H. Sutherland.

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(9) **KNOX, WILSON HOMER**, Assoc. M., 2669 Terrace Ave., Columbus, Ohio (Elected March 7, 1921.) (Age 37. Born Columbus, Ohio.) 1914 C. E., Ohio State Univ. *TT 4: P 4.* — June to Aug. 1914 with Cummings & Downer, Engrs., Painesville, Ohio, on surveying. *TT 0.2: P 0.2.* — Aug. 1914 to July 1924 (except Aug. 1917 to Feb. 1919 2d Lieut. and 1st Lieut., 30th Engrs., U. S. Army) with City of Cleveland, Ohio, until Aug. 1916 with Sewage Disposal Dept. as Draftsman on plans for sewage-disposal plants, on surveys and on work at sewage-treatment experiment station, Aug. 1916 to Aug. 1917 at Division Ave. filtration plan, in charge of field work on reconstruction of filtered-water reservoir and laying of large main from pumping station, and after March 1919 with Div. of Water,

3½ years assisting on report on plans for development of water supply, in charge of studies for size and location of large mains for Baldwin-Fairmount project and of plans for same, one year Asst. Engr. on design of Baldwin filtration plant, being in charge of design of coagulation basins and gate houses, and 6 months Res. Engr. at same plant; after Dec. 1923 Engr. of Design, in charge of all civil engineering design, including plans for filter equipment, chemical house, mixing chambers, alum-storage house for Baldwin-Fairmount project, large steel and cast-iron mains, etc. *TT 8.4: P 8.4: RC 6.4: D 4.7.*—July 1924 to date Asst. Engr., State Dept. of Health, Columbus, reviewing plans of water-supply projects, water-filtration and softening plants, sewerage and sewage-treatment plants, also field investigations of installations, etc. *TT 5.7: P 5.7: RC 5.7.*—*TT 18.3: P 18.3: RC 12.1: D 4.7.* Refers to E. G. Bradbury, P. Burgess, W. H. Dittoe, J. W. Ellms, G. B. Gascoigne, A. V. Ruggles, F. H. Waring.

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(14) **LEWALD, ALFRED**, Assoc. M., 6025 West Cabanne Pl., St. Louis, Mo. (Elected Nov. 27, 1917.) (Age 43. Born Cincinnati, Ohio.) 1907 B. S. in Civ. Eng. and 1915 C. E., Washington Univ. *TT 4: P 4.*—1907 to 1909 Surveyor, Constr. Div., St. Louis Street Dept. *TT 2: P 2.*—1909 to 1910 Prin. Asst. Engr. with Brenneke & Fay, Res. Engrs. on construction of Municipal Bridge across Mississippi River at St. Louis, Mo. *TT 1: P 1.*—1910 to 1914 Engr., St. Louis Sewer Dept., on design, construction and maintenance. *TT 4: P 4: RC 2: D 2.*—1914 to 1915 Engr. and Gen. Mgr., Kamp-Lewald Eng. & Constr. Co., Inc., on construction of several sewer districts for St. Louis. *TT 1: P 1: RC 1.*—1915 to 1916 contracted for several sewer districts for St. Louis. *TT 1: P 1: RC 1.*—1916 to 1921 Engr. and Supt., until 1920 estimating, bidding and constructing sewer and water systems, also paving in various parts of United States, with Moreno-Burkham Constr. Co., St. Louis (2 years) and Porter Bros., Norfolk, Va. (2 years), then on sewer and water systems and paving with Walbridge & Aldinger, Detroit, Mich. *TT 5: P 5: RC 5: D 1.*—1921 to 1927 Contr. on construction of sewer and water systems and paving in and around St. Louis. *TT 6: P 6: RC 6.*—1927 to date Pres. and Treas., Alfred Lewald, Inc., St. Louis, Mo., also (past year) Treas., Asphalt Paving Co. of St. Louis, Inc. *TT 3: P 3: RC 3.*—*TT 27: P 27: RC 18: D 3.* Refers to G. G. Black, E. B. Fay, A. P. Greensfelder, E. R. Kinsey, W. E. Rolfe, C. K. Traber, J. C. Travilla, E. E. Wall.

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(9) **LORING, HENRY DELANO**, Assoc. M., 1278 Michigan Ave., Cincinnati, Ohio. (Elected July 9, 1912.) (Age 45. Born Boston, Mass.) 1907 S. B., Mass. Inst. Tech. *TT 4: P 4.*—1905 (3 months) Rodman, Boston & Albany R. R. *TT 0.1: SP 0.1.*—July 1905 to Feb. 1906 Deck Officer and Aid, U. S. Coast and Geodetic Survey. *TT 0.6: P 0.6.*—Feb. to Oct. 1906 Asst. Supt. of Construction, U. S. Quartermaster's Dept., Fort Totten, N. Y., on buildings, roads, etc. *TT 0.7: P 0.7.*—1907 to date with The Ferro Concrete Constr. Co., as Draftsman, Timekeeper, Mgr. of Branch Office, Designer, Estimator, Chf. Engr., Secy. and Treas., on erection of commercial and industrial buildings, have been responsible for structural design of \$40 000 000 worth of buildings and for complete design of over \$5 000 000 worth; also responsible for estimates and (with others) for execution of contracts. *TT 22: P 5: RC 17: D 22.*—*TT 27.4: SP 0.1: P 27.3: RC 17: D 22.* Refers to T. Green, H. B. Luther, C. N. Miller, F. L. Raschig, C. M. Stegner, H. W. Streeter, H. M. Waite.

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(3) **PHILIPS, HECTOR SOMERVILLE**, Assoc. M., City Engrs. Office, Hamilton, Ont., Canada. (Elected May 31, 1916.) (Age 47. Born Airdrie, Scotland.) Jan. 1901 to July 1902 Asst. to J. W. Maclean, Surveyor, Edinburgh, Scotland. *TT 0.8: SP 0.8.*—July 1902 to July 1904 Asst. to Morham & Gardner, Engrs. & Surveyors, surveying and adjusting contractor's accounts on various buildings. *TT 1: SP 1.*—July 1904 to May 1907 Asst. Res. Engr., John Best & Co., Ltd., Contrs., on Edinburgh Waterworks (Talla Scheme), level and transit work setting out, final measurements, etc., reservoir embankment, waste weir, shafts, tunnels, etc. *TT 1.9: SP 0.9: P 1.*—May 1907 to April 1909 Chf. Asst. for A. & R. McCulloch, Leith, Scotland, plotting surveys, designing alterations and additions to buildings. *TT 1.9: P 1.9.*—April 1909 to March 1910 Res. Engr., Neil McLeod, Ltd., Contr., Edinburgh, Scotland, level and transit work, etc. for Troon water-works, reservoir, embankment and aqueduct. *TT 0.9: P 0.9.*—May 1910 to May 1911 Asst. to Fowler & Siggelkow, Civ. Engrs., Mt. Kisco, N. Y., field and office work, surveys for title guaranty companies. *TT 1: P 1.*—May to Aug. 1911 Draftsman, McKenzie, Mann & Co., Toronto, Ont., railway drafting. *TT 0.2: P 0.2.*—Aug. 1911 to May 1916 Draftsman, Res. Engr. and Asst. Engr. in charge of design, Main Drainage Dept., City of Toronto, Ont., Canada, on general sewage schemes, storm sewers and North Toronto drainage scheme; July to Dec. 1915 loaned to International Joint Comm., Buffalo Office, as Asst. Engr. re pollution of boundary waters, investigations and studies for sewage-disposal plants for cities on Niagara River. *TT 4.8: P 4.8: RC 3.5: D 3.*—

May 1916 to March 1917 Chf. Draftsman, Canada Nitro Products Ltd., on design of shrapnel loading plants, etc. *TT 0.8: P 0.8: RC 0.8.*—March 1917 to April 1920 Lieut., Canadian Engrs., and Asst., Dept. Soldiers Civil Re-establishment, Montreal. *TT 1.6: P 1.6.*—April 1920 to date Designing Engr., until Nov. 1921 for City of London, and since then for City of Hamilton, Ont., sewage-disposal plants, storm- and intercepting-sewer schemes, pumping stations, plants, waterworks, intake, etc. *TT 10: P 10: RC 10: D 10.*—*TT 24.9: SP 4.8: P 20.6: RC 14.3: D 13.* Refers to W. Gore, C. H. Nordell, E. M. Proctor, J. C. K. Stuart, F. C. Tolles, R. O. Wynne-Roberts.

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(14) **QUINN, JOHN IGNATIUS**, Assoc. M., Saunders-Kennedy Bldg., Omaha, Nebr. (Elected Aug. 31, 1916.) (Age 46. Born Minneapolis, Minn.) 1908 C. E., Univ. of Minn. *TT 4: P 4.*—Nov. 1908-Dec. 1913 Asst. Engr., Bureau of Public Works, Irrigation Div., Philippines Islands, on investigations of proposed irrigation projects, including Ft. Pikit Colonization project, Cottabato, projects in Iliocos Norte, etc., in charge of hydrographic investigations, Southern Luzon and Visayan Islands (Feb. 1910—Feb. 1911) and of all hydrographic work (Aug.—Dec. 1913); also in office on designs, Tarlac Irrigation and other projects. *TT 5.1: P 5.1: RC 1.7: D 0.2.*—April 1914 to May 1917 Asst. Engr., U. S. Reclamation Service, Phoenix, Ariz., and Payson, Utah, on design of irrigation structures for Salt River Valley and Strawberry Valley projects. *TT 3.1: P 3.1: D 3.1.*—May 1917 to March 1919 1st Lieut., Corps of Engrs., U. S. Army, from Nov. 1917 to Feb. 1919 in France, in Toul and St. Die Sectors on construction of defensive lines, etc., and in Meuse-Argonne on reconstruction of narrow-gauge railways, etc., and after Armistice on construction of barracks, roads, etc., at Brest and La Mans. *TT 1: SP 1.*—June 1919 to Sept. 1923 with St. Louis County, Minn., until Feb. 1920 as Asst. Engr., then Bridge Engr. in charge of design and construction of bridges and grade separation (about \$2 000 000) for county and state trunk system of roads. *TT 4.2: P 4.2: RC 3.6: D 4.2.*—Oct. 1923 to date with U. S. Bureau of Public Roads, Washington office, until May 1925 on design, investigation and review of Federal Aid project, May to Dec. 1925 Res. Engr. on reconstruction of Ft. Leavenworth bridge, Jan. 1925—June 1926 in Washington office on review of Federal Aid projects, July—Aug. 1926 Res. Engr., Forest City (S. Dak.) bridge and since Aug. 1926 Dist. Bridge Engr., 5th Dist., Omaha, Nebr. *TT 6.5: P 6.5: RC 4.2: D 1.*—*TT 23.9: SP 1: 22.9: RC 9.5: D 8.5.* Refers to E. I. Brown, W. V. Buck, G. L. Campen, O. H. Dickerson, P. P. Furber, C. M. Greer, E. W. Kelly, G. K. Larrison, J. V. McNary, A. M. Rawn, W. Ward.

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(1) **SCHOONMAKER, LEON MONROE**, Assoc. M., 4 Court Square, Long Island City, N. Y. (Elected Aug. 31, 1915.) (Age 48. Born Singac, N. J.) 1904 C. E., Princeton Univ. *TT 4: P 4.*—1905 to 1923 with Topographical Bureau, Borough of Queens, New York City, until 1912 as Transitman, Computer and Instrumentman, on computations, and in charge of field party on surveys for final maps of City of New York, 1913 to 1914 Asst. Engr. to Engr. in Chg., on damage map surveys and in charge of computations, 1915 to 1916 Acting Engr.-in-Chg., and after 1917 Prin. Asst. Engr., in charge of work of Bureau, including mapping, surveys, street openings, computations, drafting, examinations and reports, designing street system for Borough, etc. *TT 14.7: SP 3: P 11.7: RC 10.7: D 7.7.*—1923 to date in private practice as Cons. Engr., being Consultant on design and construction of Nassau Boulevard and other large projects, Cons. Engr. for Long Island Chamber of Commerce on Long Island engineering improvements and for Queens Borough Planning Comm., Member and Secretary, Long Island Sub-Committee of Metropolitan Park Conference, etc. *TT 7.5: P 7.5: RC 7.5: D 7.5.*—*TT 26.2: SP 3: P 23.2: RC 18.2: D 15.2.* Refers to H. K. Endemann, C. U. Powell, H. H. Smith, L. C. L. Smith, A. S. Tuttle.

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(2) **SNOW, BAYARD FRANCIS**, Assoc. M., 97 Federal St., Salem, Mass. (Elected Oct. 2, 1922.) (Age 41. Born Wakefield, R. I.) 1909 B. S., Trinity Coll.—Sept. 1909 to Sept. 1910 Draftsman, acting as Transitman, Inspector and Chf. of Party on construction of Morris Dam, Waterbury, Conn. *TT 0.7: SP 0.3: P 0.4.*—Sept. to Dec. 1910 Concrete Foreman on same dam for Ryan & Unmack, Contrs., New Haven, Conn., on concrete core, spillways, etc. *TT 0.2: SP 0.2.*—Feb. to June 1911 Engr. with Horton & Hemenway, Contrs., on Perkins Inst. for the Blind, Watertown, Mass., lines, grades, care of building materials. *TT 0.3: P 0.3: RC 0.3.*—Aug. to Oct. 1911 Asst. Engr. with Stone & Webster, on power investigations in New Hampshire. *TT 0.2: P 0.2: RC 0.2.*—March to July 1912 Transitman, State Board of Public Roads, Rhode Island, on surveys, lines and grades for highway construction. *TT 0.1: SP 0.1.*—July 1912 to July 1915 with New York, New Haven & Hartford R. R., 7 months as Asst. Draftsman, then Draftsman in charge of design, drafting and computations on large grade-crossing elimination, Pawtucket, R. I. *TT 2.7: SP 0.8: P 2.4: RC 2.4.*

D 2.4.—July 1915 to Aug. 1917 Chf. Draftsman and Asst. Engr., Office of Chf. and Designing Engrs., Water Supply Board, Providence, in charge of general and contract drawings for water supply project (\$22 000 000). TT 2.1: P 2.1: RC 2.1: D 0.5.—Aug. 1917 to Aug. 1918 Asst. Engr., City of Akron, Ohio, in charge of construction of addition (10 000 000 gal.) to rapid-sand filters; redesigned large part of substructure. TT 1: P 1: RC 1: D 0.6.—Aug. to Sept. 1918 Asst. Engr. for R. W. Pratt, Cons. Engr., on design of rapid-sand filters for Walkerville, Ont., and report on filters for Windsor, Ont. TT 0.2: P 0.2: RC 0.2: D 0.2.—Sept. 1918 to June 1921 with Morris Knowles, Inc., Engrs., Pittsburgh, Pa., as Asst. Engr. and Chf. Draftsman, Design Div., responsible for design of reservoirs, dams, filtration plants, sewage-treatment, etc., after April 1921 in Cleveland office on sewage-treatment design. TT 2.8: P 2.8: RC 2.8: D 2.8.—June 1921 to July 1922 with Philadelphia Co., Pittsburgh, until Oct. 1921 as Asst. Engr., Valuation Dept., on valuation of Equitable Gas Co.'s properties, then Employment Supervisor in charge of office and engineering employment, and after March 1922 Asst. Engr. in charge of elimination of high-tension hazards. TT 1.1: P 1.1: RC 0.5: D 0.2.—July 1922 to Dec. 1923 Chf. Engr., African Union Co., Secondee, Gold Coast, West Africa, in charge of design and construction of buildings, harbor work, etc., and (4 months) Acting Gen. Mgr. TT 1.4: P 1.4: RC 1.4: D 0.5.—Dec. 1923 to Nov. 1925 with Water Supply Board, Providence, as Asst. Engr. on hydraulic studies and design of covered reservoirs and Res. Engr. in charge of construction of small masonry dam and aqueduct and steel pipe lines. TT 1.9: P 1.9: RC 1.9: D 0.5.—Nov. 1925 to date with South Essex Sewerage Dist., Salem, Mass., as Res. Engr. in charge of surveys, design, construction and administration of newly-formed district; has also acted as Cons. Engr. on design of sewage-pumping station, and is member of firm, Snow & Chesley, Contrs. TT 4.4: P 4.4: RC 4.4: D 4.4.—TT 19.1: SP 0.9: P 18.2: RC 17.2: D 12.1. Refers to R. R. Evans, X. H. Goodnough, K. R. Kennison, W. W. Peabody, M. R. Scharff, F. E. Winsor, E. Wright.

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(15) WARD, JOSEPH EUGENE, Assoc. M., 1104 Austin St., Wichita Falls, Tex. (Elected July 9, 1923.) (Age 36. Born Wichita Falls, Tex.) 1917 B. S. in C. E., Univ. of Tex. TT 4: P 4.—Aug. to Oct. 1913 Instrumentman, and July to Oct. 1915 Instrumentman and Paving Inspector, Eng. Dept., Wichita Falls, Tex.—Summer 1916 Rodman, Santa Fe R. R.—June to Sept. 1917 San. Engr., City of Austin, Tex., on investigations and daily bacteriological analysis of water supply. TT 0.2: P 0.2: RC 0.2.—Sept. 1917 to Feb. 1919 with U. S. Army, until May 1918 as Instructor, School of Military Aeronautics, Austin, then with Eng. Corps. TT 1.4: P 1.4: RC 0.7.—Feb. to July 1919 Deputy County Surveyor, Wichita County, Tex., in direct charge of surveying during oil boom. TT 0.4: P 0.4: RC 0.2: D 0.2.—July 1919 to June 1920 and Nov. 1921 to April 1922 Engr. and Surveyor at Wichita Falls. TT 1.3: P 1.3: RC 0.7: D 0.7.—Sept. 1920 to Nov. 1921 Sewer Engr., Wichita Falls, in complete charge of sewer improvements (\$1 000 000). TT 1.2: P 1.2: RC 1.2.—April 1922 to date member of firm, Montgomery & Ward, Cons. Engr., in responsible charge of work, including design and construction of water-works systems for 26 cities, sewer systems and sewage-disposal plants for 16 cities, street paving in 25 cities and city-plan reports, appraisals for water, sewer and light systems, preliminary surveys and reports on extensive irrigation projects, etc., for numerous cities (total approx. \$12 000 000). TT 8: P 8: RC 5.1: D 2.6.—TT 16.6: P 16.6: RC 8.1: D 3.4. Refers to E. C. H. Bantel, G. D. Fairtrace, J. Montgomery, W. J. Powell, T. U. Taylor, N. T. Veatch, Jr., M. C. Welborn.

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(15) WENDT, JAMES ROBERT, Sr., Assoc. M., Box 84, Benton, La. (Elected Aug. 31, 1925.) (Age 45. Born Ft. Deposit, Ala.) 1908 B. S. E., and 1909 C. E., Univ. of Ala. TT 4: P 4.—1909 to 1910 Surveyor, U. S. Corps Engrs., Montgomery, Ala., in charge of hydrographic surveys, office and field work. TT 1.5: P 1.5.—1910 to 1911 Asst. County Engr., Dallas County, Selma, Ala., in charge of location, construction and estimates. TT 1: P 1.—1911 to 1912 Inspector, U. S. Corps Engrs., Mobile, Ala., dredging Mobile Harbor. TT 0.5: P 0.5.—1912 to 1920 Surveyor and Jun. Engr., Mississippi River Comm., New Orleans, La., in charge of hydrographic and topographic surveys, levee construction and bank protection on Mississippi River. TT 0.8: P 0.8: RC 0.8.—1920 to 1922 Parish Highway Engr., Tensas Parish, St. Joseph, La., in charge of highway construction, location, bridge design, etc., also in charge of drainage work. TT 2: P 2: RC 2: D 2.—1922 to 1926 Dist. Maintenance Supt., Louisiana Highway Comm., Baton Rouge, La., in charge of highway maintenance Dist. No. 8 (250 miles) (1% years) and Dist. No. 9 (350 miles) (2% years). TT 4: P 4: RC 4.—1926 to date Parish Highway Engr., Bossier Parish, Benton, La., in charge of highway construction, location, bridge design, etc. TT 4: P 4: RC 4: D 4.—TT 25: P 25: RC 18: D 6. Refers to J. T. Bullen, J. B. Converse, C. D. Evans, J. M. Fourmy, W. S. Guedry, C. M. Kerr, R. O. Morrison.

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(8) **WILSON, FRANCIS DOUGLAS**, Assoc. M., 510 N. Dearborn St., Chicago, Ill. (Elected Sept. 9, 1919.) (Age 42. Born London, Ont., Canada.) 1909 B. A. Sc., Univ. of Toronto. *TT 4: P 4.*—Summer 1908 and May 1909 to Sept. 1910 with McGregor & McIntyre, Toronto, Ont., detailing and checking structural steel shop details for factory, office and theatre buildings, etc. *TT 0.7: SP 0.7.*—Sept. 1910 to Oct. 1914 Structural Engr., until Sept. 1913 with Canada Foundry Co., Toronto, on office buildings, colleges, factory and mill buildings, theatres and bridges, then with Standard Steel Constr. Co., Welland, Ont., on design and estimating buildings and bridges. *TT 3.3: SP 0.7: P 2.6: RC 1: D 1.1.*—Oct. 1914 to March 1915 with Beatty Mfg. Co., Welland, special work on design and charge of design of steel structure for suction dredges, excavators and traveling coal derricks. *TT 0.5: P 0.5: RC 0.5: D 0.5.*—April 1915 to Jan. 1916 with Detroit (Mich.) Edison Co., on power plant construction inspection. *TT 0.8: P 0.8.*—Jan. 1916 to date with The Austin Co., Engrs. and Bldrs., Cleveland, Philadelphia, Detroit and Chicago, as follows: Jan. to Aug. 1916 Designing Engr., Cleveland Dist. Office, on reinforced concrete and structural steel chemical plant (\$2 000 000) for Hooker Electro Chemical Co., Niagara Falls, N. Y.; July to Nov. 1917 Engr. on design and engineering work for aeroplane factories (\$3 000 000) for Curtis Aeroplane Co., Buffalo, N. Y.; Dec. 1917 to March 1918 Engr. in charge of engineering work on reinforced concrete, steel and timber powder factories and dwelling operation (\$1 000 000) for U. S. Govt. Naval Proving Grounds, Indian Head, Md.; March 1918 to April 1921 Chf. Draftsman, Detroit and Chicago Dists., in charge of design, specifications and preparation of drawings for industrial buildings including foundries equipped with cupolas, core ovens, etc.; since April 1921 Dist. Engr., Chicago Dist., in charge design, drawings, specifications, etc., for industrial plants, including buildings and plumbing, heating and electrical equipment, including Cadillac Motor Car Co. Foundries, Detroit (5 buildings, approx. \$1 500 000), Oakland Motor Car Co.'s Pontiac Plant (approx. \$10 000 000), manufacturing buildings, including foundry (approx. \$4 000 000) for Caterpillar Tractor Co., Peoria, Ill., work covers reinforced concrete, structural steel and timber construction for foundries, laundries, printing and chemical plants, machine shops, paper mills, warehouses, large motor-bus garages, automobile plants, airports, hangars, etc. *TT 14.2: P 14.2: RC 13.2: D 14.2.*—*TT 23.5: SP 1.4: P 22.1: RC 14.7: D 15.8.* Refers to W. Dyer, H. H. Esselstyn, J. E. Ferguson, A. S. Forster, H. S. Jacoby, T. S. Needels, W. Snaith, C. R. Young.

FROM THE GRADE OF JUNIOR

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(15) **ADAMS, MADISON HILLIARD**, Jun., Box 1311, Houston, Tex. (Elected July 12, 1926.) (Age 28. Born Forney, Tex.) 1923 B. S. in Civ. Eng., Tex. Agri. and Mech. Coll. *TT 4: P 4.*—July to Oct. 1923 Scout, Sun Oil Co., Beaumont, Tex., collecting information as to formations, etc., of wells. *TT 0.1: SP 0.1.*—Oct. 1923 to Oct. 1924 Draftsman, Coastal Blue Print & Map Co., Beaumont, and (after Feb. 1924) Dallas (Tex.) Power & Light Co., drafting, map making, running instrument, and tracing plans for building work. *TT 0.5: SP 0.5.*—Oct. 1924 to date with Concrete Eng. Co., until Dec. 1925 as Draftsman and writing orders, Dec. 1925 to July 1926 Salesman, estimating and selling reinforcing materials, July 1926 to Aug. 1929 Representative, estimating, design estimating and selling reinforcing materials, being in charge of San Antonio office, and since Aug. 1929 Asst. Mgr., Houston office, estimating, designing and selling reinforcing materials. *TT 4.9: SP 0.6: P 4.3: RC 3.7: D 3.7.*—*TT 9.5: SP 1.2: P 8.3: RC 3.7: D 3.7.* Refers to H. D. Jolley, J. L. Lochridge, J. T. L. McNew, C. L. Meyer, J. L. O'Hearn, J. J. Richey, E. W. Robinson.

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(1) **CARSWELL, CHARLES**, Jun., 75 West St., New York City. (Elected July 9, 1923.) (Age 31. Born Wilmington, Del.) 1920 B. S. in C. E., and 1923 C. E., Univ. of Del. *TT 4: P 4.*—1920 to 1921 Draftsman, American Bridge Co., Pencoyd, Pa., detailing structural steel. *TT 0.6: SP 0.6.*—1921 to 1923 Jun. Engr., and 1923 to 1926 Asst. Engr., Delaware River Bridge Joint Comm., Philadelphia, Pa., 1 year on field work, then on office work, design, computation, and specification writing, being Asst. to Prin. Asst. Engr. *TT 5.5: P 5.5: RC 3: D 3.*—1926 to 1928 Structural Designer, Arlington Memorial Bridge Comm., Washington, D. C., design, and direction of drafting and computations for design. *TT 1.7: P 1.7: RC 1: D 1.7.*—1928 to date Asst. Engr., Port of New York Authority, New York City, design, special investigations and writing specifications. *TT 1.4: P 1.4: RC 1.4: D 1.4.*—*TT 13.2: SP 0.6: P 12.6: RC 5.4: D 6.1.* Refers to O. H. Ammann, M. B. Case, A. Dana, J. L. Nagle, E. W. Stearns.

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(13) CRENshaw, ALLEN EHLERS, Jun., 337 Thirteenth St., Oakland, Cal. (Elected June 4, 1928.) (Age 29. Born Cartersville, Ga.) Student, New Mexico Military Inst. (Sept. 1918 to May 1919), New Mexico School of Mines (Sept. 1920-June 1921), Wilson Eng. Corporation, Cambridge, Mass. (March 1929 to date) and Univ. of California Extension (Sept. 1929 to date). 1916 to 1917 Rodman and Chainman with County Engr., El Reno, Okla. TT 0.5: SP 0.5.—June to Dec. 1917 earthwork computations, U. S. Reclamation Service, Shoshone Project, Wyo. TT 0.2: SP 0.2.—Dec. 1917 to Feb. 1918 chaining, U. S. Land Office, Denver, Colo. TT 0.1: SP 0.1.—Sept. 1919 to Sept. 1920 and May 1921 to Dec. 1923 with Colorado State Highway Comm., 1 year as Concrete Inspector on reinforced concrete highway bridges, 1 year Instrumentman and 1½ years Asst. Engr. on highway construction. TT 1.8: SP 1.8.—Nov. 1923 to May 1924 Civ. Engr., County Surveyor's Office, Riverside, Cal., in charge of survey for paving, and drawing plans and specifications covering data for construction of Corona-Elsinore Highway. TT 0.5: P 0.5: RC 0.5: D 0.5.—May to Dec. 1924 Engr., Nevada-California Power Co., Riverside, on construction of LeVining Plant No. 1, laying out construction of reinforced concrete power house (excavation and construction), construction of 1 600-ft. penstock with 4-ft. slip joint pipe and 2 600 ft. of riveted bell-joint pressure line pipe; completion of 22-ft. rock-fill dam with concrete face and of 1 600-ft. tunnel through rock, making surveys of lake capacities, constructing spillways, etc. TT 0.6: P 0.6: RC 0.6.—Nov. 1924 to Jan. 1928 Civ. Engr. for Alameda County, Cal., being Chf. of Party on surveys and acting as Res. Engr. on highway construction. TT 3: P 3: RC 3.—Jan. to June 1928 private work.—June to Aug. 1928 Topographer and Transitman, Western Pacific R. R. TT 0.2: P 0.2: RC 0.2.—Aug. to Nov. 1928 Transitman and Chf. of Party on irrigation, with Harmon S. Bonte, Cons. Engr., San Francisco, Cal., divided and subdivided 900 acres into small irrigated farms, laid out roads, ditch lines and grades, built flood-protection levee along San Joaquin River, made map and computed subdivision. TT 0.3: P 0.3: RC 0.3: D 0.2.—Nov. 1928 to Jan. 1929 with Punnett Perez & Hutchinson, Cons. Engrs., San Francisco, on office work for subdivision, road and street construction, estimating, computing, etc. TT 0.2: P 0.2: D 0.2.—Jan. to March 1929 Statistician with H. W. Crozier, Cons. Engr., San Francisco, securing data and preparing estimate on breakwater, Monterey Harbor. TT 0.2: P 0.2.—March 1929 to date Asst. Engr., Southern Pacific Co., on maintenance-of-way, East Bay Elec. Div., Oakland, Cal. TT 1: P 1: D 0.6.—TT 8.6: SP 2.6: P 6: RC 4.6: D 1.5. Refers to H. S. Bonte, M. C. Collins, G. A. Posey, J. O. Wanzer, E. J. Waugh.

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(4) EVANS, WALLACE BRYANT, Jun., 5110 Hazel Ave., Philadelphia, Pa. (Elected June 7, 1926.) (Age 31. Born San Diego, Cal.) Sept. 1916 to Jan. 1917 Chainman and Rodman, and Nov. 1919 to May 1920 Transitman and Draftsman, Highway Dept., Yuma County, Ariz., locating and mapping roads and culverts, estimates and surveys. TT 0.5: SP 0.5.—Jan. 1917 to Feb. 1918 Chainman and Rodman, May to Sept. 1918 Hydrographer gauging Colorado River, records of discharge, silt, etc., Dec. 1918 to April 1919 Instrumentman and Draftsman on irrigation surveys, computations and reports, and June 1920 to May 1923 Instrumentman and Job Engr., laying out and making estimates for irrigation of 15 000 acres, being Job Engr. on construction of reinforced concrete pumping plant, laying concrete pipe lines, building flumes, canals and irrigation structures, all for U. S. Reclamation Service, Yuma, Ariz. TT 2.8: SP 1.8: P 1: D 1.—Feb. to May 1918 Rodman, City of Yuma. TT 0.1: SP 0.1.—May to Nov. 1919 Asst. Engr. and Transitman, Lyman Water Co., St. Johns, Ariz., on construction of storage dam and canal system; as Asst. Engr. had charge of surveys, topography, etc., and made investigations of drainage area of Little Colorado River for storage dam. TT 0.4: SP 0.2: P 0.2: RC 0.2.—July to Aug. 1923 Engr., Richardson Constr. Co., Esperanza, Sonora Ry., Mexico, laying out townsite and building artificial lake for winter resort, estimates and surveys. TT 0.2: P 0.2: RC 0.2.—Aug. 1923 to Feb. 1924 Chf. of Party, Flintridge Development Co., Los Angeles, Cal., on subdivision of estates, construction and surveys of mountain roads, laying out ornamental drives, etc. TT 0.5: P 0.5: RC 0.5.—Feb. 1924 to Aug. 1925 Designer and Draftsman, City of Glendale, Cal., design of storm drains, culverts and timber bridges, street improvement plans. TT 1.4: SP 0.3: P 1.1: RC 1.1: D 1.1.—Sept. 1925 to Nov. 1927 and Feb. to Oct. 1928 Job Engr., Dwight P. Robinson & Co., Inc., in charge of engineering for construction of copper and lead smelters, crushing plant and railroad yard, roaster, reverberatory and lead blast furnaces, cottrell plant, boilers, conveyor system, etc., and at Douglas, Ariz., and (after Feb. 1928) for steam-electric power plant, three boilers and a 37 500-kw. turbo-generator, at Seal Beach, Cal. TT 2.9: P 2.9: RC 2.9.—Nov. 1927 to Feb. 1928 Chf. Engr., Rose & Evans, Engrs., Redondo Beach, Cal., in charge of topography and subdivision of 640 acres, surveys, computations and record maps. TT 0.3: P 0.3: RC 0.3.—Nov. 1928 to

Jan. 1929 Supervisor of Constr., Associated Oil Co., Los Angeles, Cal., in charge of construction of 81 super-service stations. *TT 0.2: P 0.2: D 0.2*.—Jan. to Aug. 1929 Job Engr., J. G. White Eng. Corporation, Boling, Tex., construction of power plant for production of sulphur. *TT 0.6: P 0.6: RC 0.6*.—Aug. 1929 to date Job. Engr., United Engrs. & Constructors, Inc., Philadelphia, in charge of job engineering for construction of electric duct, steam, air and water lines, railroad tracks, retaining walls, signal towers, turn-tables, etc., including electrification of lines of Pennsylvania R. R. *TT 0.6: P 0.6: RC 0.6*.—*TT 10.5: SP 2.9: P 7.6: RC 7.6: D 1.1*. Refers to N. Bostwick, T. A. Currie, Jr., B. F. Dupuy, M. D. Glessner, J. F. Johannsen, E. C. Macy, T. R. Mini, R. B. Ray.

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(8) **FAHY, FRANK EDWARD**, Jun., 333 North Michigan Ave., Chicago, Ill. (Elected July 16, 1928.) (Age 26. Born New Orleans, La.) 1925 B. S. in C. E., Purdue Univ. *TT 4: P 4*.—June 1925 to March 1927 Masonry Inspector and Draftsman, Bridge Dept., Illinois Central R. R. Co., inspecting, supervising and estimating quantities on bridge construction in connection with track elevation and later drafting and design of bridge and masonry work. *TT 1.3: SP 0.5: P 0.8*.—April 1927 to date Structural Engr. with Holabird & Root, Archts., Chicago, Ill., on structural design of various types of buildings, in responsible charge of work on design of hotels, office and store buildings, hospitals, etc. *TT 3: P 3: RC 3: D 3*.—*TT 8.3: SP 0.5: P 7.8: RC 3: D 3*. Refers to F. E. Brown, H. E. Eckles, H. Ellsberg, E. L. Eriksen, G. E. Gustafson, F. W. Stubbs, Jr., D. K. White.

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(15) **GARRETT, WILLIAM HAYDEN**, Jun., Box 217, Archer City, Tex. (Elected Dec. 3, 1928.) (Age 30. Born Grapeland, Tex.) Jan. 1920 to Nov. 1923 Rodman and Instrumentman with County Engr., Coleman County, Tex., on highway location and construction. *TT 3.5: SP 0.3: P 3.2*.—Nov. 1923 to Jan. 1925 Instrumentman and Draftsman with County Engr., Callahan County, Tex., on plans and estimates, supervising construction. *TT 1.2: P 1.2: RC 1.2: D 0.6*.—Feb. to April 1925 Office Engr., Devlin Eng. Co., County Engrs., Jones County, Tex., plans and estimates on highway work. *TT 0.2: P 0.2: RC 0.2: D 0.2*.—April to June 1925 Field Engr. with County Engr., Shackelford County, on highway location and construction. *TT 0.2: P 0.2: RC 0.2*.—June 1925 to date with Texas State Highway Dept. as Asst. Res. Engr. and (March to July 1927) Res. Engr. on location, plans, estimates and supervision of construction, and since Feb. 1930 Acting Res. Engr. in Archer and Young Counties, on designs, plans, estimates and supervision of construction on State and Federal highways; 1929 was Asst. Engr., Archer County on State and Federal highways and had charge of 53 miles of surfacing (approx. \$1 000 000). *TT 4.8: P 4.8: RC 4.8: D 3.4*.—*TT 9.8: SP 0.8: P 9.5: RC 6.3: D 4.2*. Refers to H. R. Anderson, G. G. Edwards, J. C. Feild, G. E. Franklin, G. R. Johnston, H. S. Kerr.

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(1) **SUHR, CARL JOHN**, Jun., 409 Prospect Ave., Mt. Vernon, N. Y. (Elected Oct. 1, 1928.) (Age 27. Born Brooklyn, N. Y.) 1925 M. E., Stevens Inst. Tech. *TT 4: P 4*.—Sept. 1925 to date with W. W. Young, Cons. Engr., White Plains, N. Y., until March 1927 as Rodman, Chainman, Instrumentman, and (1 year) Chf. of Field Party on transit work, leveling, topography, surveys, cost estimates, etc.; March 1927 to April 1928 on Blind Brook Project, about 2 months as Draftsman on contract plans, sewer and reinforced concrete design, etc., then Asst. Res. Engr., on construction 18-in. cast-iron force main, 30-in. outfall, reinforced concrete pumping station, disposal plant with appurtenances, lateral sewers, concrete roads, testing materials; since April 1928 Asst. Engr. on surveys and contract drawings for Mamaroneck Project, design of sewers, direction of construction of concrete pipe trunk-sewers, testing materials, estimates, etc. (April to July 1928), direction of final surveys for Hutchinson Project, 10 miles of trunk sewers, cast-iron and concrete gravity and force, including topography, levels, sewer locations, plans, etc. (July 1928 to May 1929), direction of precise survey for 10 000-ft. tunnel under Mt. Vernon (part of Hutchinson Project) (May to Aug. 1929) and of Hutchinson Project construction, including cast-iron and concrete trunk sewers and appurtenances (up to 78 in.), concrete-lined tunnel in rock, soft ground and sand, cast-iron force main, reconstruction of macadam and concrete pavements, material testing, monthly estimates, reports, etc. *TT 4.2: SP 0.8: P 3.9: RC 1.9*.—*TT 8.2: SP 0.3: P 8.9: RC 1.9*. Refers to A. M. Brosius, G. W. Gardner, B. P. Larkin, F. J. Laverty, F. C. Zeigler.

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(15) **VALDES, AGUSTIN MANUEL**, Jun., Republica de Colombia No. 66, Mexico City, Mexico. (Elected March 11, 1929.) (Age 28. Born Tepic, Nayarit, Mexico.) 1925 B. S. C. E., Univ. of Dayton. 1928 C. E., Univ. of Mexico. *TT 4: P 4*.—July to Oct. 1925 Constr. Engr., Cia. Constructora, D. F. Mexico, in charge of construction of houses. *TT 0.3: P 0.3: RC 0.3*.—Oct. 1925 to Sept. 1926 Asst. Location Engr., Byrne Bros. Constr. Co.,

in charge of party on highway location in Mexico. *TT 1: P 1: RC 1.*—Sept. to Dec. 1926 Chf. of Party, Mexican Irrigation Comm., on triangulation and canal location for Papigochic River, Chih., Mexico. *TT 0.2: P 0.2: RC 0.2.*—Dec. 1926 to March 1929 with J. G. White Eng. Corporation, until May 1927 as Chf. of Party on coordinate system for topography, canal location and property lines, Calles dam, Est. Pabellon, then Engr. in charge of arch analysis, same dam, design of canal structures, estimates and costs, on design of diversion dam and after April 1928 in Mexico City on design of canal structures, estimates and costs for Conchos and Yaqui projects. *TT 2.3: P 2.3: RC 1.8: D 1.8.*—April 1929 to date Head, Constr. Dept., National Comm. of Irrigation, Mexico City. *TT 1: P 1: RC 1.*—*TT 8.8: P 8.8: RC 4.8: D 1.8.* Refers to H. P. Bunger, W. L. Drager, J. Hinds, C. H. Howell, F. E. Weymouth.

The Board of Direction will consider the applications in this list not less than thirty days after the date of its issue.